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HEATING, COOLING, VENTILATING HANDBOOK

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(U.S.) NAVAL FACILITIES ENGINEERING COMMAND, NORFOLK, VA

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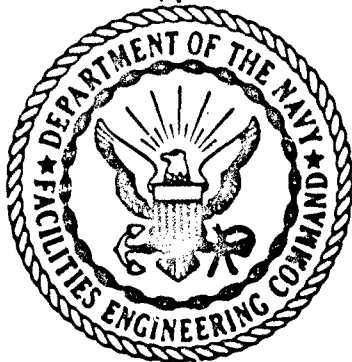
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Abstract: This handbook provides guidance to Planners-Estimators in projecting lab hour requirements for workers to perform typical facilities maintenance tasks. Proper use of the data in this handbook will help provide more realistic, consistent, and timely labor hour estimates. These estimates provide bench marks which enable managers to evaluate and control actions based on improvement. More effective response and support at minimum cost can, in turn, be realized.



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**ENGINEERED
PERFORMANCE STANDARDS**
Public Works Maintenance

HEATING, COOLING, VENTILATING HANDBOOK

**NAVFAC P-704.0
ARMY TB 420-8
AIR FORCE AFM 85-44**

**DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND**



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FOREWORD

This handbook provides guidance to Planners-Estimators in projecting labor hour requirements for workers to perform typical facilities maintenance tasks. Proper use of the data in this handbook will help provide more realistic, consistent, and timely labor hour estimates. These estimates provide bench marks which enable managers to evaluate and control actions based on improvement. More effective response and support at minimum cost can, in turn, be realized.

Comments and suggestions regarding the handbook are invited and should be sent to:

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or AUTOVON 690-3324

To facilitate forwarding of comments, addressed feedback forms are included in the back of this handbook.


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By Order of the Secretaries of the Army, the Navy, and the Air Force.

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References

1. TB-420-2, NAVFAC P-701.0, EPS General Handbook

| CRAFTS | | JOB PREP. | PERCENT CRAFT ALLOW. | |
|---|-------------------------|-----------|----------------------|-----------|
| | | | ONE MAN | MULTI-MAN |
| BOILER WORK - PERF. BY ANY SHOP | | .4 | 23 | 33 |
| CARPENTRY | GENERAL | .3 | 18 | 23 |
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| JANITORIAL | | .2 | 11 | 13 |
| MACHINE SHOP | | .3 | 23 | 24 |
| MACHINE REPAIR | | .4 | 28 | 36 |
| MASONRY | GENERAL | .4 | 15 | 23 |
| | WITH PURCHASED CONCRETE | .4 | 23 | 31 |
| MOVING AND RIGGING | | .3 | 28 | 40 |
| PAINT | GENERAL | .2 | 14 | 15 |
| | SPRAY | .2 | 16 | 17 |
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| SHEETMETAL | | .3 | 20 | 26 |
| STRUCTURAL | SHOP | .3 | 20 | 24 |
| | FIELD | .6 | 20 | 24 |
| TRACKAGE | | .4 | - | 22 |
| WHARFBUILDING | | .5 | 24 | 32 |

1111

| TASK REF. | VALUE | TWO MAN JOB | | TASK REF. | VALUE |
|-------------------------------------|--|--|--------------------------------|-----------|---------|
| PWP-27 | .9 | MORE THAN TWO MEN | | PWP-27 | 1.8 |
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| | | IRON PIPE | PER 10' HIGH (2 - 5' SECTIONS) | P-701.1 | .9 |
| | | | PER 15' HIGH (3 - 5' SECTIONS) | P-701.1 | 1.8 |
| | | | PER 20' HIGH (4 - 5' SECTIONS) | P-701.1 | 2.7 |
| SCAFFOLDING - ERECT OR DISMANTLE | | ALUMINUM - PER SECTION (UP TO 5 SECTIONS HIGH) | | P-701.1 | .3 |
| | | PER ARMLOAD - PER 200' ROUND TRIP | | PWA-5 | .04 |
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| | | ZONE 2 | | PWA-2 | 0 |
| | | ZONE 3 | | PWA-2 | 0 |
| | | ZONE 4 | | PWA-2 | .11 |
| | | ZONE 5 | | PWA-2 | .19 |
| | | ZONE 6 | | PWA-2 | .27 |
| | | ZONE 7 | | PWA-2 | .35 |
| | | ZONE 8 | | PWA-2 | .43 |
| | | ZONE 9 | | PWA-2 | .55 |
| | | ZONE 10 | | PWA-2 | .71 |
| | | ZONE 11 | | PWA-2 | .87 |
| | | ZONE 12 | | PWA-2 | 1.03 |
| | | ZONE 13 | | PWA-2 | 1.19 |
| | | ZONE 14 | | PWA-2 | 1.35 |
| | | ZONE 15 | | PWA-2 | 1.51 |

CHAPTER 1. INTRODUCTION

1. Spread Sheets. The spread sheets on the following pages are arranged by task area. Overall information is shown at the top of each page with specific task data listed down the left hand side. Various tasks, with times measured using industrial engineering techniques, are displayed on the spread sheets to provide guidance in choosing the correct group time. A more complete description of each task is provided in Chapter 3, TASK TIMES.

2. Task Times. The task times are listed numerically and the reference numbers correspond with those shown on the spread sheets or tabular listings. The task times show the operations that were combined to develop the various tasks. More detailed developmental data supporting the operation times is maintained by the NAVFAC Industrial Engineering Center.

3. General Information. Labor hour estimates obtained from spread sheets in this handbook do not include time for staging required materials at the job site. Ancillary activities, such as this type of material handling, can be estimated using data in the General Handbook (TB 420-2, NAVFAC P-701.0) as guidance. Allowances, travel time and job preparation time are additionally covered in the General Handbook. Engineered Performance Standards (EPS) should only be applied by personnel who have attended an EPS training course.

CHAPTER 2

SPREAD SHEETS

Section 1. Cooling, Ventilating

| TASK AREA: Air conditioning units - annual maintenance | | | | | | |
|--|---|-------------------|-------------------|-------------------|--------------------------------|--|
| Tasks Include: (1) Shell and tube water-cooled condenser - drain and fill, remove and install end plates, punch and clean tubes, fabricate and install gaskets. (2) All other units - clean, inspect, adjust, lubricate bearings, change oil and filter as appropriate. | | | | | | |
| NOTE: For seasonal and continuous operating systems. | | | | | | |
| DESCRIPTION | GROUP E Time hrs. | GROUP F Time hrs. | GROUP G Time hrs. | GROUP H Time hrs. | NOTE | |
| 3-9 tons (per unit) | 1 | | 2 | 3 | over 3 use 2,002 hrs. per unit | |
| 25-49 tons (per unit) | | | 1 | | over 1 use 4,899 hrs. per unit | |
| 100-199 tons (per unit) | | | | | use 8,987 hrs. per unit | |
| 3-24 tons (per unit) | 2 (for 1 unit use Group D, 1.1 hrs.) | 3 | 4-5 | 6-7 | over 7 use .939 hrs. per unit | |
| 25-49 tons (per unit) | | 1 | 2 | 3 | over 3 use 2,289 hrs. per unit | |
| 25-99 tons (per unit) | 1 | | 2 | 3 | over 3 use 2,115 hrs. per unit | |
| 800-999 tons (per unit) | | | | | use 12,185 hrs. per unit | |
| 3-9 tons (per unit) | 1 | | 2 | 3 | over 3 use 2,002 hrs. per unit | |
| 25-49 tons (per unit) | | | 1 | | over 1 use 4,899 hrs. per unit | |
| 100-199 tons (per unit) | | | | | use 8,987 hrs. per unit | |
| 3-49 tons (per unit) | | 1 | | 2 | over 2 use 3,398 hrs. per unit | |
| All sizes (per unit) | 2 (for 1 unit use Group D, 1.1 hrs.) | 3 | 4-5 | 6-7 | over 7 use .913 hrs. per unit | |
| TASK AREA: Air conditioning units - annual maintenance | | | | | | |

TASK AREA: Air conditioning units - recurring maintenance

Tasks Include: Remove and install access panel(s), clean, inspect, lubricate, add oil, make adjustments, change filters and fill out inspection report.

NOTE: To perform this maintenance requires minimum system shutdown.

| DESCRIPTION | | GROUP C Craft Time hrs. | GROUP D Craft Time hrs. | GROUP E Craft Time hrs. | GROUP F Craft Time hrs. | NOTE |
|---------------------------------|------------------------------------|---|-------------------------|-------------------------|-------------------------|---------------------------------------|
| AIR HANDLER | 3-24 tons (per unit) VT-38 | 1 | 2 | 3 | 4-6 | over 6 use .566 hrs. per unit |
| | 25-250 tons (per unit) VT-60 | | 1 | 2 | 3 | over 3 use 1.028 hrs. per unit |
| PACKAGE-TYPE/ SELF-CONTAINED | 3-9 tons (per unit) VT-41 | 1 | | 2 | 3-4 | over 4 use .735 hrs. per unit |
| | 3-24 tons (per unit) VT-42 | 1 | | 2 | 3-4 | over 4 use .781 hrs. per unit |
| | 25 tons and over (per unit) VT-44 | | 1 | 2 | 3 | over 3 use .989 hrs. per unit |
| | All sizes (per fan assembly) VT-39 | 1 | 2 | 3 | 4-5 | over 5 use .618 hrs. per fan assembly |
| WOOD | 25 tons and over (per unit) VT-45 | | 1 | 2 | 3 | over 3 use 1.094 hrs. per unit |
| | 25-99 tons (per unit) VT-47 | 1 | | 2 | 3-4 | over 4 use .730 hrs. per unit |
| METAL | 500-999 tons (per unit) VT-48 | | | | 1 | over 1 use 2.219 hrs. per unit |
| | 3-24 tons (per unit) VT-40 | 1 | 2 | 3 | 4-5 | over 5 use .678 hrs. per unit |
| PACKAGE-TYPE/ SELF-CONTAINED | 25 tons and over (per unit) VT-45 | | 1 | 2 | 3 | over 3 use 1.094 hrs. per unit |
| | 3-9 tons (per unit) VT-41 | 1 | | 2 | 3-4 | over 4 use .735 hrs. per unit |
| WINDOW | 10-49 tons (per unit) VT-37 | | 1 | | | over 2 use 1.207 hrs. per unit |
| | All sizes (per unit) VT-36 | 2-3 (for 1 unit use Group B, 0.3 hrs.) | 4-5 | 6-8 | 9-14 | over 14 use .247 hrs. per unit |

TASK AREA: Air conditioning units - recurring maintenance

TASK AREA: Air conditioning units - seasonal shutdown

Tasks include: Remove and install panel, sensory inspect bearings, turn off power, fill out inspection report, pump down and drain tank as appropriate.

| DESCRIPTION | | GROUP B Craft 0.3 Time hrs. | GROUP C Craft 0.6 Time hrs. | GROUP D Craft 1.1 Time hrs. | GROUP E Craft 1.8 Time hrs. | NOTE |
|--|---|------------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------------|
| AIR HANDLER | Cooling only All sizes (per unit) VT-26 | | 1 | 2 | 3-4 | over 4 use .470 hrs. per unit |
| | All sizes (per unit) VT-27 | | 1 | 2 | 3-4 | over 4 use .497 hrs. per unit |
| COMPRESSOR OPEN (CENTRAL COMPRESSION) SYSTEM | 100-199 tons (per unit) VT-29 | | | 1 | 2 | over 2 use .967 hrs. per unit |
| | 3-99 tons (per unit) VT-30 | 1 | 2 | 3 | 4-5 | over 5 use .372 hrs. per unit |
| | All sizes (per fan assembly) VT-31 | 1 | 2 | 3-4 | 5-6 | over 6 use .33 hrs. per fan assembly |
| | 3-99 tons (per unit) VT-33 | | 1 | 2 | 3 | over 3 use .663 hrs. per unit |
| METAL | 100-199 tons (per unit) VT-32 | | | 1 | | over 1 use 1.205 hrs. per unit |
| | 100-199 tons (per unit) VT-29 | | | 1 | 2 | over 2 use .967 hrs. per unit |
| | 3-99 tons (per unit) VT-30 | 1 | 2 | 3 | 4-5 | over 5 use .372 hrs. per unit |
| | 25-199 tons (per unit) VT-33 | | 1 | 2 | 3 | over 3 use .663 hrs. per unit |
| WOOD | 100-299 tons (per unit) VT-32 | | | 1 | | over 1 use 1.205 hrs. per unit |
| | All sizes (per unit) VT-33 | | 1 | | 2 | over 2 use .742 hrs. per unit |
| WINDOW | All sizes (per unit) VT-35 | (for 1 unit use Group A, .13 hrs.) | 3-4 | 5-7 | 8-11 | over 11 use .184 hrs. per unit |

TASK AREA: Air conditioning units - seasonal shutdown

| TASK AREA: Air conditioning units - remove and install units/components | | | | | | | | | | |
|--|---|--|----------------|---------|----------------|---------|----------------|---------|----------------|--|
| Tasks include: Time to perform all operations required to remove and install units/components. | | | | | | | | | | |
| DESCRIPTION | | GROUP E | Craft 1.8 hrs. | GROUP F | Craft 2.9 hrs. | GROUP G | Craft 4.4 hrs. | GROUP H | Craft 6.0 hrs. | NOTE |
| A I R | COIL (HEATING AND COOLING) | 25-99 tons (per component) VT-11 | | | | 1 | | | | over 1 use 3.818 hrs. per component |
| | EVAPORATOR | 25-99 tons (per component) VT-12 | | | | | | 1 | | over 1 use 5.344 hrs. per component |
| H A N D L E R | CENTRIFUGAL (SQUIRREL CAGE) | All sizes (per component) VT-73 | 1 | | | 2 | | 3 | | over 3 use 1.843 hrs. per component |
| | PROPELLER- TYPE | All sizes (per component) VT-74 | 1 | | | 2 | | 3 | | over 3 use 1.928 hrs. per component |
| C O M P O N E N T S | 100 disposable-type filters (from/to overhead plenums (average 10 plenums) (per 100 filters) | VT-65 | | | | | | 1 | | over 1 use 6.158 hrs. per 100 filters (average 10 plenums) |
| | VALVE PLATES | All sizes (per unit) VT-67 | | | | 1 | | | | over 1 use 4.639 hrs. per unit |
| S O R L | THERMOSTATIC EXPANSION VALVE | All sizes (per component) VT-14 | | | | 1 | | | | over 1 use 3.913 hrs. per component |
| | AIR-COOLED | 3-10 tons (per unit) VT-8 | | | | 1 | | | | over 1 use 4.276 hrs. per unit |
| C O M P O N E N T S | SHIELD AND TUBE WATER-COOLED | 25-99 tons (per unit) VT-9 | | | | | | | | use 9.755 hrs. per unit |
| | | 25-99 tons (per unit) VT-10 | | | | | | | | use 7.655 hrs. per unit |
| TASK AREA: Air conditioning units - remove and install units/components | | | | | | | | | | |

| TASK AREA: Air conditioning units - remove and install units/components | | | | | | | |
|---|--|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|--|
| Tasks Include: Time to perform all operations required to remove and install units/components | | | | | | | |
| DESCRIPTION | | GROUP E Craft 1.8 Time hrs. | GROUP F Craft 2.9 Time hrs. | GROUP G Craft 4.4 Time hrs. | GROUP H Craft 6.0 Time hrs. | NOTE | |
| COOLING TOWER FAN AND MOTOR (ONLY) | All sizes (per component) VT-75 | | 1 | 2 | | over 2 use 2.531 hrs. per component | |
| | AIR-COOLED CONDENSER VT-8 | | | 1 | | over 1 use 4.276 hrs per unit | |
| | EVAPORATOR VT-8 | | | 1 | | over 1 use 4.276 hrs per unit | |
| | CENTRIFUGAL (SQUIRREL CAGE) VT-73 | 1 | | 2 | 3 | over 3 use 1.843 hrs per component | |
| | PROPELLER- TYPE VT-74 | 1 | | 2 | 3 | over 3 use 1.928 hrs per component | |
| P A C K A G E | | | | | | | |
| TASK AREA: Air conditioning units - remove and install units/components | | | | | | | |

| TASK AREA: Air conditioning systems/units/components - pump down, charge and evacuate | | | | | | |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|
| DESCRIPTION | GROUP B Craft Time hrs. | GROUP C Craft Time hrs. | GROUP D Craft Time hrs. | GROUP E Craft Time hrs. | NOTE | |
| Charge air conditioning system (per ton) VT-1 | | 1-4 | 5-20 | 21-41 | over 41 tons use .621 hrs. plus .04 hrs. per ton | |
| Pump down air conditioning system (compressor only) (per unit) VT-2 | 1 | 2 | 3 | 4-5 | over 6 use .382 hrs. per unit | |
| Pump down air conditioning system (into receiver) (per system) VT-3 | | 1 | 2 | 3 | over 3 use .591 hrs. per system | |
| Pump down air conditioning system (separate cylinders) (per component) VT-4 | | 1-2 | 3-4 | 5-8 | over 8 tons use .279 hrs. plus .23 hrs. per cylinder | |
| Pull vacuum on air conditioning system (per system) VT-5 | | | | 1 | over 1 use 1.514 hrs. per air conditioning system | |
| TASK AREA: Air conditioning systems/units/components - pump down, charge and evacuate | | | | | | |

TASK AREA: Remove and install air conditioning components - miscellaneous

NOTE: These task times are for miscellaneous work that could apply to components found in more than one system/unit with the same work content.

| DESCRIPTION | | GROUP B Craft Time hrs. | GROUP C Craft Time hrs. | GROUP E Craft Time hrs. | GROUP F Craft Time hrs. | NOTE |
|---|---|----------------------------------|----------------------------------|---|----------------------------------|-------------------------------------|
| UNIT I R A A I S S A S S A H I T L E C O N D I T I O N I N G U N I T S | Up to 1/2 ton (per unit) VT-77 | | 1 | 3 (for 2 units use Group D, 1.1 hrs.) | 4-5 | over 5 use .697 hrs. per unit |
| | 1/2 - 2 tons (per unit) VT-16 | | | 1 | 2 | over 2 use 1.475 hrs. per unit |
| | Up to 3 tons (per unit) VT-24 | | | | 1 | over 1 use 2.230 hrs. per unit |
| | Up to 1/2 ton (per unit) VT-76 | 1 | 2 | 5-6 (for 3-4 units use Group D, 1.1 hrs.) | 7-10 | over 10 use .328 hrs. per unit |
| E M O V E A N D I N S T A L L | 1/2 - 2 tons (per unit) VT-17 | | 1 | 3 (for 2 units use Group D, 1.1 hrs.) | 4-5 | over 5 use .604 hrs. per unit |
| | Belt on water cooler (per unit) VT-69 | 1 | 2-3 | 7-9 (for 4-6 units use Group D, 1.1 hrs.) | 10-15 | over 15 use .232 hrs. per unit |
| | Disposable type filter in separate overhead unit (per filter) VT-21 | 1 | 2-3 | 7-9 (for 4-6 filters use Group D, 1.1 hrs.) | 10-15 | over 15 use .231 hrs. per filter |
| | Set of 3 belts on a compressor in an open (central compression) air conditioning system (per set) VT-22 | | 1 | 2-3 | 4-5 | over 5 use .701 hrs. per set |

TASK AREA: Remove and install air conditioning components - miscellaneous

TASK AREA: Remove and install air conditioning components - miscellaneous

| TASK AREA: Remove and install air conditioning components - miscellaneous | | | | | | |
|---|---|-----------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|--|
| NOTE: These task times are for miscellaneous work that could apply to components found in more than one system/unit with the same work content. | | | | | | |
| | DESCRIPTION | GROUP C Craft 0.6 Time hrs. | GROUP D Circuit 1.1 Time hrs. | GROUP E Craft 1.8 Time hrs. | GROUP F Craft 2.9 Time hrs. | NOTE |
| R | Electric motor (under 1 HP) (per component) VT-7 | 1 | 2 | 3-4 | 5-6 | over 6 use .535 hrs. per component |
| E | Strainer or dryer in open (central compression) air conditioning system | | | 1 | 2 | over 2 use 1.639 hrs. per component |
| M | VT-15 | | | | | |
| O | Door gasket on domestic refrigerator | | 1 | | 2 | over 2 use 1.214 hrs. per gasket |
| V | VT-68 | | | | | |
| E | Centrifugal (per assembly) VT-73 | | | 1 | | over 1 use 1.843 hrs. per assembly |
| F | | | | | | |
| A | | | | | | |
| H | | | | | | |
| M | Propeller-type (per assembly) VT-74 | | | 1 | | over 1 use 1.928 hrs. per assembly |
| O | | | | | | |
| T | In cooling tower (per unit) VT-75 | | | | 1 | over 1 use 2.531 hrs. per unit |
| A | | | | | | |
| S | Seals and bearings in water pump- 3 HP motor (per component) VT-72 | | | 1 | 2 | over 2 use 1.576 hrs. per component |
| T | | | | | | |
| A | Float linkage in water towers or condensers (per component) VT-23 | 1 | 2 | 3-4 | 5-7 | over 7 use .509 hrs. per component |
| L | | | | | | |
| L | Replace solid bearing with split type bearing on centrifugal (squirrel cage) fan shaft (per bearing) VT-18 | | 1 | | 2 | over 2 use 1.243 hrs. per bearing |
| TASK AREA: Remove and install air conditioning components - miscellaneous | | | | | | |

| TASK AREA: Air conditioning units/components - miscellaneous | | | | | | |
|---|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------------|
| NOTE: These task times are for miscellaneous work that could apply to components found in more than one system/unit with the same work content. | | | | | | |
| | DESCRIPTION | GROUP C Craft Time hrs. | GROUP H Cr.:t Time hrs. | GROUP J Craft Time hrs. | GROUP K Craft Time hrs. | NOTE |
| R E H O V E A N D | Receiver/King Valve in open (central compression) air conditioning system (per component) VT-13 | 1 | | 2 | 3 | over 3 use 3.959 hrs. per component |
| | Thermostatic expansion valve in open (central compression) air conditioning system (per component) VT-14 | 1 | | 2 | 3 | over 3 use 3.913 hrs. per component |
| I N S T A L | 100 disposable-type filters (average 10 plenums) (per 100 filters) VT-65 | | 1 | | 2 | over 2 use 6.158 hrs. per 100 filters |
| | Valve plates on compressor in open (central compression) air conditioning system (per unit) VT-67 | 1 | | 2 | 3 | over 3 use 4.639 hrs. per unit |
| DISASSEMBLE, CLEAN, INSPECT ASSEMBLE, EVACUATE COMPRESSOR | 10-25 tons (per unit) VT-70 | 1 | | 2 | | over 2 use 5.179 hrs. per unit |
| | 50-100 tons (per unit) VT-71 | | | 1 | | over 1 use 9.323 hrs. per unit |
| | 100 tons absorption system (per unit) VT-19 | | 1 | | 2 | over 2 use 6.986 hrs. per unit |
| ANNUAL MAINTENANCE ON ABSORBER OR GENERATOR | 300 tons absorption system (per unit) VT-20 | | | | 1 | over 1 use 11.436 hrs. per unit |
| TASK AREA: Air conditioning units/components - miscellaneous | | | | | | |

Section 2. Heating

| TASK AREA: Fire or water tube boiler - assist boiler inspector in inspection | | | | | | |
|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------------|--|
| External Inspection: Includes all external boiler parts and components. Internal Inspection: Includes all internal boiler parts and components. Operating Inspection: Includes using inspector gage, checking and adjusting safety valve, waiting for maximum pressure. Hydrostatic Inspection: Includes using hand pump, search and repair, search and repair minor leaks; no time to fill or drain drum. | | | | | | |
| DESCRIPTION | GROUP B Craft Time hrs. | GROUP C Crack Time hrs. | GROUP D Craft Time hrs. | GROUP E Craft Time hrs. | NOTE | |
| INSPECTION VT-200 Fire tube (per boiler) | 1 | 2 | 3 | 4-5 | over 5 use .383 hrs. per boiler | |
| INSPECTION VT-201 Water tube (per boiler) | | 1 | 2-3 | 4 | over 4 use .464 hrs. per boiler | |
| INSPECTION VT-202 Fire tube (per boiler) | | 1 | 2 | 3 | over 3 use .671 hrs. per boiler | |
| INSPECTION VT-203 Water tube (per boiler) | | | | 1 | over 1 use 1.426 hrs. per boiler | |
| INSPECTION VT-204 Fire tube (per boiler) | | 1 | 2 | 3-4 | over 4 use .533 hrs. per boiler | |
| INSPECTION VT-205 Water tube (per boiler) | | | 1 | 2 | over 2 use .876 hrs. per boiler | |
| TASK AREA: Fire or water tube boiler - assist boiler inspector in inspection | | | | | | |

TASK AREA: Fire or water tube boiler - assist boiler inspector in inspection

External Inspection: Includes all external boiler parts and components.
 Internal Inspection: Includes all internal boiler parts and components.
 Operating Inspection: Includes using inspector gage, checking and adjusting safety valve, waiting for maximum pressure.
 Hydrostatic Inspection: Includes using hand pump, search and repair minor leaks; no time to fill or drain drum.

| DESCRIPTION | | GROUP D Craft 1.1 hrs. | GROUP E Craft 1.8 hrs. | GROUP F Craft 2.9 hrs. | GROUP G Craft 4.4 hrs. | NOTE |
|--|-------------------------|------------------------|------------------------|------------------------|------------------------|----------------------------------|
| T E S T I N G H Y D R O S T A T I C I N S P E C T I O N | Fire tube (per boiler) | | 1 | 2 | 3 | over 3 use 1.480 hrs. per boiler |
| | VT-206 | | | | | |
| I N T E R N A L I N S P E C T I O N | Water tube (per boiler) | | | 1 | 2 | over 2 use 2.436 hrs. per boiler |
| | VT-207 | | | | | |
| I N T E R N A L I N S P E C T I O N | Fire tube (per boiler) | 1 | 2 | 3 | 4 | over 4 use 1.053 hrs. per boiler |
| | VT-208 | | | | | |
| I N T E R N A L I N S P E C T I O N | Water tube (per boiler) | | 1 | | 2 | over 2 use 1.890 hrs. per boiler |
| | VT-209 | | | | | |
| E X T E R N A L I N S P E C T I O N | Fire tube (per boiler) | | | 1 | 2 | over 2 use 2.534 hrs. per boiler |
| | VT-210 | | | | | |
| | Water tube (per boiler) | | | | 1 | over 1 use 4.326 hrs. per boiler |
| | VT-211 | | | | | |

TASK AREA: Fire or water tube boiler - assist boiler inspector in inspection

| TASK AREA: Fire tube or water tube boiler, superheater, precipitator, or preheater-open or close fireside | | | | | | | | | |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Open or close fireside: Consists of removing and installing a combination of doors, plates, steel strips, firebricks, etc. Includes all work necessary to remove or install each piece. | | | | | | | | | |
| Total time shall be obtained as follows: 1) Determine total number of each component to be removed or installed. 2) Find group time value for each number of components and 3) Add group time values together. | | | | | | | | | |
| NOTE: Quantities given are for remove or install and must be doubled for remove and install. | | | | | | | | | |
| DESCRIPTION | GROUP A Craft Time hrs. | GROUP B Craft Time hrs. | GROUP C Craft Time hrs. | GROUP D Craft Time hrs. | GROUP E Craft Time hrs. | GROUP F Craft Time hrs. | GROUP G Craft Time hrs. | GROUP H Craft Time hrs. | GROUP I Craft Time hrs. |
| Tube sheet compartment door (per door) VT-212 | 1-2 | 3-5 | | | | | | | |
| Fire box door (per door) VT-213 | 1-2 | 3-4 | 5-8 | | | | | | |
| Ash pit door (per door) VT-214 | 1-2 | 3-4 | 5-8 | | | | | | |
| Access pass door (per door) VT-215 | 1-2 | 3-4 | 5-8 | | | | | | |
| Explosion proof doors (per door) VT-216 | 1 | 2-3 | 4-8 | | | | | | |
| Superheater door (per door) VT-217 | 1 | 2-3 | 4-8 | | | | | | |
| Precipitator door (per door) VT-218 | | | 1 | 2 | | | | | 3-4 |
| Access door (per door) VT-219 | 1-2 | 3-4 | 5-8 | | | | | | |
| Clean-out door (per door) VT-220 | 1-7 | 8-15 | | | | | | | |
| Peephole door (per door) VT-221 | 1-7 | 8-15 | 16-31 | | | | | | |
| TASK AREA: Fire tube or water tube boiler, superheater, precipitator, or preheater-open or close fireside | | | | | | | | | |

| TASK AREA: Fire tube or water tube boiler, superheater, precipitator or preheater-open or close fireside | | | | | |
|---|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Open or close fireside: Consists of removing and installing a combination of doors, plates, steel strips, firebricks, etc. Includes all work necessary to remove or install each piece. | | | | | |
| Total time shall be obtained as follows: 1) Determine total number of each component to be removed or installed. | | | | | |
| 2) Find group time value for each number of components and | | | | | |
| 3) Add group time values together. | | | | | |
| NOTE: Quantities given are for remove or install and must be doubled for remove and install. | | | | | |
| DESCRIPTION | GROUP A Craft Time hrs. | GROUP B Craft Time hrs. | GROUP C Craft Time hrs. | GROUP D Craft Time hrs. | GROUP E Craft Time hrs. |
| Inspection plates (bolted) VT-222 | 1-2 | 3-4 | 5-8 | 9-16 | |
| Steel sheec strip (per strip) VT-223 | 1-15 | 15-30 | | | |
| Firebox top (per top) VT-224 | 1-4 | 5-9 | 10-19 | | |
| Firebox top insulation (per piece) VT-225 | 1-8 | 9-15 | 16-32 | | |
| Firebrick (per brick) VT-226 | 1-15 | 15-30 | 31-61 | 62-106 | |
| TASK AREA: Fire tube or water tube boiler, superheater, precipitator-open or close fireside | | | | | |

| TASK AREA: Fire tube or water tube boiler-open or close waterside | | | | | | | |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Open or close waterside: Consists of removing and installing a combination of plugs, manhole and handhole covers. Use of ladders where required is included. Total time shall be obtained as follows: 1) Determine total number of each component to be removed or installed 2) Find group time value for each number of components and 3) Add group time values together. | | | | | | | |
| DESCRIPTION | GROUP A Craft Time hrs. | GROUP B Craft Time hrs. | GROUP C Craft Time hrs. | GROUP D Craft Time hrs. | GROUP E Craft Time hrs. | GROUP F Craft Time hrs. | GROUP G Craft Time hrs. |
| Shell plug (per plug) VT-227 | 1-6 | 7-13 | | | | | |
| Manhole cover (per cover) VT-228 | 1-2 | 3-4 | 5-8 | 9-14 | | | |
| Handhole cover (per cover) VT-229 | 1-3 | 4-6 | 7-13 | 14-23 | 24-36 | | |
| Manhole cover (per cover) VT-230 | | 1 | 2-3 | 4-6 | 7-10 | | |
| Handhole cover (per cover) VT-231 | 1 | 2-3 | 4-6 | 7-11 | 12-18 | | |
| Prepare to drain boiler (per boiler) VT-232 | 1-2 | | | | | | |
| Fill and inspect boiler (per boiler) VT-233 | | | 1 | 2 | | | |
| TASK AREA: Fire tube or water tube boiler-open or close waterside | | | | | | | |

| TASK AREA: Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater | | | | | | |
|---|---|------------------------|------------------------|------------------------|---------|---------|
| Fireside heavy slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. Vacuum fire box top. Fireside light slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. No time to vacuum fire box top. Waterside: Wash and scrape drum. Turbining tool in tubes. No time for remove or install baffling. Air preheater: Use air hose; blow out compartment at top of tubes. Clean smoke box under air preheater tubes using air hose and shovel. Precipitator: Use scraper; clean header box by vacuuming. Superheater: Use scraper; clean header box by vacuuming. No time to erect or dismantle scaffold, clean superheater tubes or header, air preheater or precipitator. | | | | | | |
| DESCRIPTION | | GROUP D | GROUP F | GROUP G | GROUP H | GROUP I |
| | | Craft 1.1 Time hrs. | Craft 2.9 Time hrs. | Craft 4.4 Time hrs. | | |
| 5' ID X 20' LONG DRUM | High pressure water only - no turbinizing - to 800 tubes (per boiler) | VT-242 | | | | |
| 3' ID X 10' LONG DRUM | Turbined-60 (1" to 3") tubes-10' to 20' long (per boiler) | VT-243 | 1 | | | |
| | Turbined-98 (2 1/2" to 4") tubes-30' to 50' long (per boiler) | VT-245 | 1 | | | |
| Precipitator - 3/4 (4") tubes 8' long (per boiler) | | VT-255 | | | | |
| Superheater - 120 tubes (per boiler) | | VT-256 | | | 1 | |
| TASK AREA: Water tube boiler-clean fireside, waterside; air preheater (fireside), precipitator (fireside), superheater | | | | | | |

| TASK AREA Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater | | | | | | | | | |
|---|-------|---|---|-----------------------------|--|------------------------------|--|------------------------------|--|
| Fireside heavy slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. Vacuum fire box top. | | | | | | | | | |
| Fireside light slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. No time to vacuum fire box top. | | | | | | | | | |
| Waterside: Wash and scrape drum. Turbining tool in tubes. No time for remove or install baffling. | | | | | | | | | |
| Air preheater: Use water hose in tubes. Clean smoke box under air preheater tubes using air hose and shovel. | | | | | | | | | |
| Precipitator: Use air hose; blow out compartment at top of tubes, push air hose into tubes. | | | | | | | | | |
| Superheater: Use scraper; clean header box by vacuuming. | | | | | | | | | |
| No time to erect or dismantle scaffold, clean superheater tubes or header, air preheater or precipitator- | | | | | | | | | |
| DESCRIPTION | | GROUP H Craft 6.0 Time hrs. | | GROUP I Craft 8.0 Time hrs. | | GROUP K Craft 12.5 Time hrs. | | GROUP L Craft 16.0 Time hrs. | |
| F | HEAVY | 4' X 10' X 15' fire box - 110 tubes (per boiler) | | | | | | | |
| I | SLAG | | | | | | | | |
| R | | VT-235 | | | | | | | |
| E | LIGHT | 4' X 10' X 15' fire box - 166 tubes (per boiler) | | 1 | | | | | |
| S | SLAG | | | | | | | | |
| I | | VT-234 | | | | | | | |
| D | | 8' X 13' X 20' fire box - 182 tubes (per boiler) | | | | | | | |
| E | | VT-236 | | | | | | | |
| W | | 3' ID X 10' long drum 110 (1" to 3") tubes - 10'-20' long (per boiler) | 1 | | | | | | |
| A | | VT-244 | | | | | | | |
| T | | 3' ID X 20' long drum 141 (2 1/2" to 4") tubes - 30'-50' long (per boiler) | | 1 | | | | | |
| E | | VT-246 | | | | | | | |
| S | | 3' ID X 20' long drum 240 (2 1/2" to 4") tubes - 30'-50' long (per boiler) | | | | | | | |
| I | | VT-247 | | | | | | | |
| D | | | | | | | | | |
| E | | | | | | | | | |
| T | | | | | | | | | |
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| N | | | | | | | | | |
| E | | | | | | | | | |
| D | | | | | | | | | |
| | | | | | | | | | |
| TASK AREA Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater | | | | | | | | | |
| | | | | | | | | | |

| TASK AREA: Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater | | | | | | |
|---|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Fireside heavy slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. Vacuum fire box top. Fireside light slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. No time to vacuum fire box top. Waterside: Wash and scrape drum. Turbining tool in tubes. No time for remove or install baffling. Air preheater: Use water hose in tubes. Clean smoke box under air preheater tubes using airhose and shovel. Precipitator: Use airhose; blow out compartment at top of tubes, push airhose into tubes. Superheater: Use scraper; clean header box by vacuuming. No time to erect or dismantle scaffold, clean superheater tubes or header, air preheater or precipitator- | | | | | | |
| | DESCRIPTION | GROUP M Craft Time hrs. | GROUP P Craft Time hrs. | GROUP Q Craft Time hrs. | GROUP S Craft Time hrs. | GROUP V Craft Time hrs. |
| F I R E S | 8' X 13' X 20' fire box - 182 tubes (per boiler) VT-239 | | | 1 | | |
| | 8' X 16' X 20' fire box - 420 tubes (per boiler) VT-240 | | | | 1 | |
| | 14' X 20' X 30' fire box - 600 tubes (per boiler) VT-241 | | | | | 1 |
| | 10' X 16' X 20' fire box - 317 tubes (per boiler) VT-237 | 1 | | | | |
| | 14' X 20' X 30' fire box - 400 tubes (per boiler) VT-238 | | 1 | | | |
| W A T E R S I D E | 5' ID X 20' long drum 425 (2 1/2" to 4") tubes - 30' to 50' long (per boiler) VT-249 | 1 | | | | |
| | 5' ID X 20' long drum 590 (2 1/2" to 4") tubes - 30' to 50' long (per boiler) VT-250 | | 1 | | | |
| | 5' ID X 20' long drum 732 (2 1/2" to 4") tubes - 30' to 50' long (per boiler) VT-251 | | | 1 | | |
| TASK AREA: Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater | | | | | | |

| TASK AREA: Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater Fireside heavy slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. Vacuum fire box top. Fireside light slag: Remove slag, loose cinders, clean fire box, 2 passes, tubes by scraping. No time to vacuum fire box top. Waterside: Wash and scrape drum. Turbining tool in tubes. No time for remove or install baffling. Air preheater: Use water hose in tubes. Clean smoke box under air preheater tubes using airhose and shovel. Precipitator: Use airhose; blow out compartment at top of tubes, push airhose into tubes. Superheater: Use scraper; clean header box by vacuuming. No time to erect or dismantle scaffold, clean superheater tubes or header, air preheater or precipitator- | | | | |
|---|------------------------------------|------------------------------------|------------------------------------|--|
| DESCRIPTION | GROUP K Craft 12.5 Time hrs. | GROUP M Crack 20.0 Time hrs. | GROUP P Craft 29.0 Time hrs. | |
| 432 (2" X 20') tubes (per boiler) VT-252 | 1 | | | |
| 675 (2 1/2" X 30') tubes (per boiler) VT-253 | | 1 | | |
| 1024 (2 1/2" X 30') tubes (per boiler) VT-254 | | | 1 | |
| TASK AREA: Water tube boiler-clean fireside, waterside, air preheater (fireside), precipitator (fireside), superheater | | | | |

A I R P R E H E A T E R (F I R E S I D E)

| TASK AREA: Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum | | | | | | | CONTINUED ON NEXT PAGE |
|--|---|-------------------------------|-------------------------------|-------------------------------|--|---|------------------------|
| Fire tubes are cleaned by using a tube scraper or pneumatic turbing tool. Tube sheet compartments are cleaned using a vacuum and broom. Fire boxes: Cleaned using broom, shovel and vacuum. Waterside: Cleaned by washing interior of drum with hose and inspecting work. | | | | | | | |
| | DESCRIPTION | GROUP A Craft Time hrs. | GROUP B Crack Time hrs. | GROUP C Craft Time hrs. | GROUP D Craft Time hrs. | GROUP E Craft Time hrs. | |
| 8' | Tube scraper (per tube) VT-257 | 1-19 | 20-42 | 43-88 | 89-156 | 157-247 | |
| | Pneumatic turbing (per tube) VT-258 | | 1-10 | 11-31 | 32-62 | 63-104 | |
| 12' | Tube scraper (per tube) VT-259 | 1-13 | 14-28 | 29-58 | 59-104 | 105-164 | |
| | Pneumatic turbing (per tube) VT-260 | | 1-7 | 8-20 | 21-41 | 42-69 | |
| 16' | Tube scraper (per tube) VT-261 | 1-9 | 10-21 | 22-44 | 45-78 | 79-123 | |
| | Pneumatic turbing (per tube) VT-262 | | 1-5 | 6-15 | 16-31 | 32-52 | |
| 20' | Tube scraper (per tube) | | | | | | |
| | Pneumatic turbing (per tube) VT-263 | | 1-4 | 5-12 | 13-25 | 26-41 | |
| Tube sheet compartment (per compartment) VT-264 | | | | 1 | 2 | 2 | |
| Fire box (per fire box) VT-265 | | | | 1 | 2 | | |
| Fire tube boiler drum interior | VT-266 | | | | Fire tube boiler 1,205 lb/hr or 36 HP | | |
| | VT-267 | | | | | Fire tube boiler 4,185 lb/hr or 175 HP | |
| | VT-268 | | | | | Fire tube boiler 4,185 lb/hr or 175 HP | |
| TASK AREA: Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum | | | | | | | |

| TASK AREA: Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum | | | | | | | CONTINUED ON NEXT PAGE |
|---|---|-----------------------------------|---|-----------------------------------|-----------------------------------|------------------------------------|------------------------|
| Fire tubes: Cleaned by using a tube scraper or pneumatic turbing tool. Tube sheet compartments: Cleaned using a vacuum and broom. Fire boxes: Cleaned using broom, shovel, and vacuum. Waterside: Cleaned by washing interior of drum with hose and inspecting work. | | | | | | | |
| | DESCRIPTION | GROUP F Craft 2.9 Time hrs. | GROUP G Craft 4.4 Time hrs. | GROUP H Craft 6.0 Time hrs. | GROUP I Craft 8.0 Time hrs. | GROUP J Craft 10.0 Time hrs. | |
| 8' | Tube scraper (per tube) | VT-257 | 248-406 | 407-588 | | | |
| | Pneumatic turbing (per tube) | VT-258 | 105-177 | 178-260 | 355-458 | 459-562 | |
| 12' | Tube scraper (per tube) | VT-259 | 165-270 | 271-392 | 393-528 | | |
| | Pneumatic turbing (per tube) | VT-260 | 70-118 | 119-173 | 174-236 | 306-375 | |
| 16' | Tube scraper (per tube) | VT-261 | 124-207 | 204-294 | 295-396 | 397-510 | |
| | Pneumatic turbing (per tube) | VT-262 | 53-88 | 89-130 | 131-177 | 178-229 | |
| 20' | Tube scraper (per tube) | | | | | 230-281 | |
| | Pneumatic turbing (per tube) | VT-263 | 42-70 | 71-104 | 105-141 | 142-183 | |
| | Tube sheet compartment (per compartment) | VT-264 | | | | 184-225 | |
| | Fire box (per fire box) | VT-265 | | | | | |
| | Fire tube Boiler drum interior | VT-269 | Fire tube boiler 6,696 lb/hr or 200 HP | | | | |
| TASK AREA: Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum | | | | | | | |

| TASK AREA: Fire tube or water tube boiler-clean tubes, tube sheet compartments, fire boxes, waterside drum | | | | CONTINUED FROM PREVIOUS PAGE | | |
|--|---|------------------------------|------------------------------|------------------------------|------------------------------|--|
| Fire tubes: Cleaned by using a tube scraper or pneumatic turblining tool. | | | | | | |
| | DESCRIPTION | GROUP K Craft 12.5 Time hrs. | GROUP L Craft 16.0 Time hrs. | GROUP M Craft 20.0 Time hrs. | GROUP N Craft 24.0 Time hrs. | |
| 12' | Tube scraper (per tube) VT-259 | | | | | |
| | Pneumatic turblining (per tube) VT-260 | 376-479 | 480-618 | | | |
| 16' | Tube scraper (per tube) VT-261 | | | | | |
| | Pneumatic turblining (per tube) VT-262 | 282-359 | 360-463 | 364-567 | | |
| 20' | Tube scraper (per tube) | | | | | |
| | Pneumatic turblining (per tube) VT-263 | 224-287 | 288-370 | 371-454 | 455-537 | |
| TASK AREA: Fire tube or water tube boiler-clean tubes | | | | | | |

| TASK AREA: Boiler tubes-remove and install tubes to 30' long and 4" OD | | | | | | | CONTINUED ON NEXT PAGE |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|
| Method 1: Remove boiler tubes through manhole or handhole without cutting into smaller sections and install new tubes. Method 2: Remove boiler tubes through manhole by cutting into smaller sections and install new tubes. Method 3: Remove and install tubes through own hole and tube sheet. | | | | | | | |
| DESCRIPTION | GROUP E Craft Time hrs. | GROUP G Craft Time hrs. | GROUP I Craft Time hrs. | GROUP K Craft Time hrs. | GROUP M Craft Time hrs. | GROUP N Craft Time hrs. | |
| Method 1 (per tube) VT-270 | 2 | 5-6 | 9-10 | 14-17 | 22-26 | | |
| Method 2 (per tube) VT-271 | 2 | 5-6 | 9-10 | 13-16 | 21-25 | | |
| Method 3 (per tube) VT-272 | 2 | 4-5 | 8-9 | 12-14 | 20-23 | | |
| Air preheater tubes (per tube) VT-273 | 2 | 4-5 | 8-9 | 12-14 | 20-23 | | |
| Tube sheet compartment door and door frame (per door) VT-274 | 2 | 5-6 | | | | | |
| NOTE: When hoist is required for reInstalling boiler tubes, add .12 hrs. per tube installed in this manner. VT-275 | | | | | | | |
| TASK AREA: Boiler tubes-remove and install tubes to 30' long and 4" OD | | | | | | | |

TASK AREA: Boiler tubes-remove and install tubes to 30' long and 4" OD

Method 1: Remove boiler tubes through manhole or handhole without cutting into smaller sections, and install new tubes.
 Method 2: Remove boiler tubes through manhole by cutting into smaller sections, and install new tubes.
 Method 3: Remove and install tubes through own hole in tube sheet.

| DESCRIPTION | GROUP P Craft Time hrs. | GROUP R Craft Time hrs. | GROUP T Craft Time hrs. | GROUP V Craft Time hrs. | NOTE |
|---|----------------------------|----------------------------|----------------------------|----------------------------|---------------------------------------|
| Method 1 (per tube) VT-270 | 29-36 | 46-57 | 71-82 | 95-106 | Add .82 hrs. for each additional tube |
| Method 2 (per tube) VT-271 | 31-37 | 47-58 | 70-81 | 94-104 | Add .86 hrs. for each additional tube |
| Method 3 (per tube) VT-272 | 28-34 | 43-53 | 64-74 | 86-95 | Add .94 hrs. for each additional tube |
| Air preheater tubes (per tube) VT-273 | 28-34 | 43-53 | 64-74 | 86-95 | Add .94 hrs. for each additional tube |
| NOTE: When hoist is required for reinstalling boiler tubes, add .12 hrs. for tube installed in this manner. VT-275 | | | | | |

TASK AREA: Boiler tubes-remove and install tubes to 30' long and 4" OD

| TASK AREA: Sectional boiler, cast iron, low pressure - remove and install push nipples | | | | | |
|--|-------------------------|-------------------------|-------------------------|-------------------------|---|
| Remove and install push nipples includes cleaning nipples and fabricating new gaskets. Normally there are an average of 3 push nipples per boiler section. | | | | | |
| DESCRIPTION | GROUP M Craft Time hrs. | GROUP N Craft Time hrs. | GROUP P Craft Time hrs. | GROUP Q Craft Time hrs. | NOTE |
| 7 boiler sections (21 push nipples) VT-276 | per 21 push nipples | | | | NOTE: Time for more than 13 boiler sections may be figured by adding 2.45 hrs. for each additional section to the above group time value. |
| 9 boiler sections (27 push nipples) VT-276 | | per 27 push nipples | | | |
| 11 boiler sections (33 push nipples) VT-276 | | | per 33 push nipples | | |
| 13 boiler sections (39 push nipples) VT-276 | | | | per 39 push nipples | |
| TASK AREA: Sectional boiler, cast iron, low pressure - remove and install push nipples | | | | | |

TASK AREA: Heaters; unit, wall, space, floor, hot water - remove, install, disassemble, clean, lube, inspect, assemble

Clean and inspect: Includes cleaning component parts and heater housing, lubrication of motors and blowers, and checking unit operation.
 Install: Includes assembling necessary parts, making any necessary brackets, putting unit in place and connecting fuel lines and vent stacks; use ladder or scaffold as required.
 Repair: Includes repair an average of two (2) leaks.

| DESCRIPTION | GROUP F Craft 2.9 Time hrs. | GROUP G Craft 4.4 Time hrs. | GROUP H Craft 6.0 Time hrs. | GROUP I Craft 8.0 Time hrs. | NOTE |
|---|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------------------|
| Install new unit heater (per heater) VT-284 | 1 | | 2 | 3 | over 3 use 2.776 hrs. per heater |
| Remove, clean, inspect and install heater (per heater) VT-278 | 1 | | 2 | | over 2 use 3.282 hrs. per heater |
| Remove old heater and install new heater (per heater) VT-279 | | 1 | | 2 | over 2 use 3.765 hrs. per heater |
| Remove, disassemble, clean, inspect, test repair and install heater (per heater) VT-280 | | | 1 | | over 1 use 5.395 hrs. per heater |

TASK AREA: Heaters; unit, wall, space, floor, hot water - remove, install, disassemble, clean, lube, inspect, assemble

| TASK AREA Heaters; unit, wall, space, floor, hot water - remove, install, disassemble, clean, lube, inspect, assemble | | | | | | | | |
|--|--|-------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------------|---------------------------------|--|
| DESCRIPTION | | GROUP C Craft Time hrs. | GROUP D Craft 1.1 Time hrs. | GROUP E Craft 1.8 Time hrs. | GROUP F Craft 2.9 Time hrs. | NOTE | | |
| Clean and inspect heater (per heater) VT-277 | | 1 | 2 | 3 | 4-6 | over 6 use .58 hrs. per heater | | |
| W A L L F U R N A C E | G Install unit A (per furnace) VT-281 | 1 | 2 | 3 | 4-6 | over 6 use .561 hrs. per furnace | | |
| | F Clean unit I (per furnace) VT-282 | 1 | 2 | 3 | 4-6 | over 6 use .590 hrs. per furnace | | |
| | L Remove and install E unit D (per furnace) VT-283 | 1 | 1 | 2 | 3 | over 3 use 1.067 hrs. per furnace | | |
| | F Install unit I (per furnace) VT-281 | 1 | 2 | 3 | 4-6 | over 6 use .561 hrs. per furnace | | |
| | A Clean unit I (per furnace) VT-285 | 1 | 1 | 2 | 3 | over 3 use .933 hrs. per furnace | | |
| | L Remove and install E unit D (per furnace) VT-283 | 1 | 1 | 2 | 3 | over 3 use 1.067 hrs. per furnace | | |
| | Does not include clean chimney or carburetor (per heater) VT-286 | | 1 | 2 | 3-4 | 5-6 | over 6 use .547 hrs. per heater | |
| | Includes clean chimney and carburetor (per heater) VT-287 | | 1 | 1 | 2 | 3 | over 3 use .966 hrs. per heater | |
| | Install heater (per heater) VT-288 | | 1 | 2 | 3 | 4-6 | over 6 use .598 hrs. per heater | |
| | Clean heater (per heater) VT-290 | | 1 | 1 | 2 | 3-4 | over 4 use .876 hrs. per heater | |
| Hot water heater (gas fired-30 gal.) | Remove and install heater (per heater) VT-289 | | 1 | | 2 | over 2 use 1.231 hrs. per heater | | |
| | Disassemble, clean, lubricate, inspect, reassemble including clean chimney (per heater) VT-291 | 1 | | 2 | 3-4 | over 4 use .744 hrs. per heater. | | |
| TASK AREA: Heaters; unit, wall, space, floor, hot water - remove, install, disassemble, clean, lube, inspect, assemble | | | | | | | | |

TASK AREA Blowers and furnaces - blowers, miscellaneous-disassemble, clean, lubricate, inspect, assemble, regulate

| B L O W E R U N I T | DESCRIPTION | GROUP A Craft Time hrs. | GROUP B Craft Time hrs. | GROUP C Craft Time hrs. | GROUP D Craft Time hrs. | NOTE |
|---|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---|
| | | | | | | |
| Disassemble, clean, lubricate, inspect, assemble | Cold water blower unit with (2) 8" centrifugal (squirrel cage) fans (per blower) VT-292 | 1 | | 2 | 3 | over 3 use .358 hrs. per blower unit |
| | Blower unit with electric and pneumatic controls (4) 8" centrifugal (squirrel cage) fans (per blower) VT-293 | | | | 1 | over 1 use .933 hrs. per blower unit |
| | Regulate blower unit thermostat and room thermostat (per blower) VT-294 | 1 | 2 | 3-5 | 6-9 | over 9 use .166 hrs. per blower unit |
| | Hot air furnace, gun type, (up to 770,000 BTU) off-season maintenance (per furnace) VT-295 | | | | 1 | over 1 use 1.238 hrs. per furnace |
| Clean, inspect, adjust electrode/ nozzle assembly (per furnace) | Clean fuel oil filter, renew element and gasket (per furnace) VT-297 | 1-2 | 3-5 | 6-10 | 11-18 | over 18 use .08 hrs. per furnace |
| | Clean, inspect, adjust electrode/ nozzle assembly (per furnace) VT-298 | 1 | 2 | 3-4 | 5-8 | over 8 use .173 hrs. per furnace |
| | Service fuel unit - includes fuel oil pump, forced draft blower and motor (per furnace) VT-299 | 1 | 2 | 3-4 | 5-8 | over 8 use .169 hrs. per furnace |
| | Service furnace fire box and flue (per furnace) VT-300 | | | 1 | 2-3 | over 3 use .412 hrs. per furnace |
| Service furnace stack switch (per furnace) | Service furnace stack switch (per furnace) VT-301 | 1-2 | 3-4 | 5-8 | 9-15 | over 15 use .09 hrs. per furnace |
| | Service air circulation fan and motor (per furnace) VT-302 | | 1 | 2-3 | 4-6 | over 6 use .210 hrs. per furnace |
| | Conduct furnace operational check (per furnace) VT-303 | 1 | 2-3 | 4-7 | 8-12 | over 12 use .110 hrs. per furnace |

TASK AREA: Blowers and furnaces - blowers, miscellaneous-disassemble, clean, lubricate, inspect, assemble, regulate

| TASK AREA: Analyze boiler water samples | | | | | | |
|---|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------------------|------|
| Analyze samples of boiler water from fire tube boilers that are treated with chemicals. | | | | | | |
| DESCRIPTION | GROUP A Craft 0.3 Time hrs | GROUP B Craft 0.6 Time hrs | GROUP C Craft 1.1 Time hrs | GROUP D Craft 1.8 Time hrs | GROUP E Craft 2.73 Time hrs | NOTE |
| ANALYZE BOILER WATER SAMPLES (PER BOILER) | 1 | 2 | 3-5 | 6-8 | Over 8 use 2.73 hrs per boiler | |
| VT-296 | | | | | | |

CHAPTER 3
TASK TIMES

VT-1 CHARGE AIR CONDITIONING SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|------------------|-------------------|-----|
| 1 | PWU-1-8552 | REMOVE AND INSTALL SERVICE VALVE CAP NUTS | .08720 | SYSTEM | |
| 2 | PWU-1-8000 | INSTALL AND REMOVE GAUGE/HOSE MANIFOLD | .05340 | SYSTEM | |
| 3 | PWU-14-IV | RELEASE AND TIGHTEN VALVES | .06768 | SYSTEM | |
| 4 | PWU-1-VIII | CHARGE ANY SIZE AIR CONDITIONING SYSTEM WITH REFRIGERANT | .01759 .03789 | SYSTEM TONNAGE | |
| 5 | PWU-5-I | MOVE CYLINDER OF REFRIGERANT | .10359 | SYSTEM | |
| 6 | 4211 | CHECK OPERATION OF SYSTEM | .29200 | SYSTEM | |

VT-1 = .62145 HRS PER SYSTEM + .03789 HRS PER TONNAGE

VT-2 PUMP DOWN AIR CONDITIONING SYSTEM; COMPRESSOR ONLY.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|--------|--------|-----|
| 1 | PWU-1-8552 | REMOVE AND INSTALL VALVE CAP NUTS | .08720 | SYSTEM | |
| 2 | PWU-1-8000 | INSTALL AND REMOVE GAUGE/HOSE MANIFOLD | .03560 | SYSTEM | |
| 3 | PWU-14-IV | RELEASE AND TIGHTEN VALVE | .06768 | SYSTEM | |
| 4 | PWU-1-I | RUN COMPRESSOR TO PUMP DOWN | .19172 | SYSTEM | |

VT-2 = .38220 HRS PER SYSTEM

VT-3 PUMP DOWN AIR CONDITIONING SYSTEM; INTO RECEIVER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|--------|--------|-----|
| 1 | PWU-1-8552 | REMOVE AND INSTALL VALVE CAP NUTS | .08720 | SYSTEM | |
| 2 | PWU-1-8000 | INSTALL AND REMOVE GAUGE/HOSE MANIFOLD | .03560 | SYSTEM | |
| 3 | PWU-14-IV | RELEASE AND TIGHTEN VALVE | .06768 | SYSTEM | |
| 4 | PWU-1-VIII | PUMP DOWN SYSTEM INTO RECEIVER | .40083 | SYSTEM | |

VT-3 = .59128 HRS PER SYSTEM

VT-4 PUMP DOWN AIR CONDITIONING SYSTEM INTO SEPARATE CYLINDERS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|------------------|--------------------|-----|
| 1 | PWU-1-8552 | REMOVE AND INSTALL VALVE CAP NUTS | .00720 | SYSTEM | |
| 2 | PWU-1-8000 | INSTALL AND REMOVE GAUGE/HOSE MANIFOLD | .07120 | SYSTEM | |
| 3 | PWC-1A-IV | OPEN AND CLOSE VALVES | .06768 | SYSTEM | |
| 4 | PWV-1-III | PUMP AIR CONDITIONING SYSTEM DOWN INTO SEPARATE CYLINDER | .01689 .23402 | SYSTEM CYLINDER | |
| 5 | PWA-5-1 | MOVE CYLINDER OF REFRIGERANT | .03453 | SYSTEM | |

VT-4 * .27549 HRS PER SYSTEM * .23402 HRS PER CYLINDER

VT-5 PULL VACUUM ON AIR CONDITIONING SYSTEM

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V28 |
|----|------------|--|---------|--------|-----|
| 1 | PWU-1-8552 | REMOVE AND INSTALL VALVE CAP NUTS | .00720 | SYSTEM | |
| 2 | PWU-1-8000 | INSTALL AND REMOVE GAUGE/HOSE MANIFOLD | .03560 | SYSTEM | |
| 3 | PWC-1A-IV | OPEN AND CLOSE COMPRESSOR SERVICE VALVES | .06768 | SYSTEM | |
| 4 | PWV-1-XVII | PULL VACUUM | 1.32348 | SYSTEM | |

VT-5 * 1.51396 HRS PER SYSTEM

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|-------------------------------|-------------|---|---------|--------|-----|
| 1 | VT-2 | PUMP DOWN COMPRESSOR | .38220 | SYSTEM | |
| 2 | PWMU-1-8552 | REMOVE AND INSTALL BOLTS IN INTAKE AND DISCHARGE VALVES | .17440 | SYSTEM | |
| 3 | PWMU-1-8011 | REMOVE AND INSTALL INTAKE AND DISCHARGE VALVES | .14640 | SYSTEM | |
| 4 | PWG-4-2 | REMOVE AND INSTALL OIL LINE AND GAGES | .21916 | SYSTEM | |
| 5 | PWMU-1-8552 | REMOVE AND INSTALL BOLTS IN VALVE FITTINGS | .17440 | SYSTEM | |
| 6 | PWMU-1-8011 | REMOVE AND INSTALL VALVE FITTINGS | .14640 | SYSTEM | |
| 7 | PWMU-1-8010 | PLUG AND UNPLUG PORT OPENINGS | .10490 | SYSTEM | |
| 8 | PWMU-1-8010 | PULL AWAY AND PUSH VALVE TO COMPRESSOR | .05240 | SYSTEM | |
| 9 | PWMU-1-8000 | REMOVE AND INSTALL BOLTS FOR BELT GUARD | .07120 | SYSTEM | |
| 10 | PWMU-1-8021 | REMOVE AND INSTALL BELT GUARD | .04900 | SYSTEM | |
| 11 | PWMU-1-8553 | LOOSEN AND TIGHTEN MOTOR BASE BOLTS | .06960 | SYSTEM | |
| 12 | PWMU-1-8010 | REMOVE AND INSTALL BELTS | .10480 | SYSTEM | |
| 13 | PWMU-1-8552 | REMOVE AND INSTALL COMPRESSOR BASE BOLTS | .08720 | SYSTEM | |
| 14 | PWN-10-KV1 | REMOVE AND INSTALL COMPRESSOR | 1.10240 | SYSTEM | |
| 15 | PWMU-1-8011 | REMOVE AND INSTALL PLYWHEEL | .07320 | SYSTEM | |
| 16 | VT-1 | CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM | .62145 | SYSTEM | |
| 17 | PWV-1-21 | PUT COMPRESSOR INTO OPERATION | .35211 | SYSTEM | |
| 18 | 4211 | CHECK OPERATION OF SYSTEM | .29200 | SYSTEM | |
| 19 | PWA-5-21 | MATERIAL HANDLING | .62154 | SYSTEM | |
| VT-6 = 5.82357 HRS PER SYSTEM | | | | | |

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|---------------------------|-------------|-------------------------------|--------|-------|-----|
| 1 | PWMU-1-9000 | REMOVE AND INSTALL SCREW | .07120 | JOB | |
| 2 | PWMU-1-8010 | REMOVE AND INSTALL PANEL | .02620 | JOB | |
| 3 | PWG-4-2 | DISCONNECT WIRING TO MOTOR | .00964 | JOB | |
| 4 | PWMU-1-8010 | PLUG AND UNPLUG UNIT | .02620 | JOB | |
| 5 | PWMU-1-8552 | REMOVE AND INSTALL BASE BOLTS | .08720 | JOB | |
| 6 | PWMU-1-8012 | REMOVE AND INSTALL MOTOR | .01780 | JOB | |
| 7 | PWMU-1-8010 | REMOVE AND INSTALL BELT | .02620 | JOB | |
| 8 | 4209 | CHECK OPERATION OF MOTOR | .16700 | JOB | |
| 9 | PWA-5-21 | MATERIAL HANDLING | .10359 | JOB | |
| VT-7 = .93503 HRS PER JOB | | | | | |

VT-8 REMOVE AND INSTALL AIR-COOLED CONDENSER OR EVAPORATOR IN A 3-10 TON PACKAGE-TYPE/SELF-CONTAINED AIR CONDITIONING SYSTEM

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|-------------------------------|------------|---|--------|--------|-----|
| 1 | PMV-3-R1 | REMOVE AND INSTALL ACCESS PANEL | .22392 | SYSTEM | |
| 2 | VT-4 | PUMP AIR CONDITIONING SYSTEM DOWN INTO SEPARATE CYLINDER | .27949 | SYSTEM | |
| | | #1 CYLINDER | .07801 | SYSTEM | |
| 3 | PMQ-19-VII | REMOVE AND INSTALL FITTING | .33608 | SYSTEM | |
| 4 | PMU-1-8010 | PLUG AND UNPLUG PORT OPENING | .10480 | SYSTEM | |
| 5 | PMV-1-IV | PREPARE TO REMOVE AIR COOLED CONDENSER | .17830 | SYSTEM | |
| 6 | PMU-1-8000 | REMOVE AND INSTALL BOLT | .14240 | SYSTEM | |
| 7 | PMU-1-8022 | REMOVE AND INSTALL CONDENSER | .20540 | SYSTEM | |
| 8 | PM -1-V | PUT AIR COOLED CONDENSER INTO OPERATION | .01673 | SYSTEM | |
| 9 | VT-1 | CHARGE PACKAGE-TYPE/SELF-CONTAINED AIR CONDITIONING SYSTEM AFTER REPAIR | .62145 | SYSTEM | |
| | | | .11367 | SYSTEM | |
| 10 | PMA-5-II | MATERIAL HANDLING | .10359 | SYSTEM | |
| 11 | PMV-1-II | CHECK OPERATION OF SYSTEM | .09211 | SYSTEM | |
| VT-8 = 4.27614 HRS PER SYSTEM | | | | | |

VT-9 REMOVE AND INSTALL AIR-COOLED CONDENSER IN A 25-99 TON OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----------------------------|------------|---|---------|-------|-----|
| 1 | VT-4 | PUMP DOWN 25-99 TON SYSTEM INTO SEPARATE CYLINDERS | .27949 | JOB | |
| | | | 5.85050 | JOB | |
| 2 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .14240 | JOB | |
| 3 | PMU-1-8021 | REMOVE AND INSTALL PANEL | .09800 | JOB | |
| 4 | PMQ-19-VII | REMOVE AND INSTALL FITTING | .33608 | JOB | |
| 5 | PMU-1-8010 | PLUG AND UNPLUG PORT OPENINGS | .10480 | JOB | |
| 6 | PMV-1-IV | PREPARE TO REMOVE CONDENSER | .17830 | JOB | |
| 7 | PMU-1-8000 | REMOVE AND INSTALL BOLT | .14240 | JOB | |
| 8 | PMN-10-XII | REMOVE AND INSTALL CONDENSER | .35716 | JOB | |
| 9 | PMV-1-IV | PUT CONDENSER INTO OPERATION | .17830 | JOB | |
| 10 | VT-1 | CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM | .62145 | JOB | |
| | | | .94725 | JOB | |
| 11 | 4211 | CHECK OPERATION OF SYSTEM | .29200 | JOB | |
| 12 | PMA-5-II | MATERIAL HANDLING | .20710 | JOB | |
| VT-9 = 9.73530 HRS PER JOB | | | | | |

VT-12 REMOVE AND INSTALL COOLING UNIT (EVAPORATOR) IN A 25-99 TON AIR HANDLING UNIT--DIRECT EXPANSION SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|--------------------------------|------------|---|------------------|------------------|-----|
| 1 | PMV-3-A1 | REMOVE AND INSTALL ACCESS PANEL | .22392 | SYSTEM | |
| 2 | VT-3 | PUMP DOWN SYSTEM INTO RECEIVER | .59128 | SYSTEM | |
| 3 | PWC-19-VIC | REMOVE AND INSTALL FITTING | .35605 | SYSTEM | |
| 4 | PMU-1-8010 | PLUG AND UNPLUG PORT OPENINGS | .10483 | SYSTEM | |
| 5 | PMV-1-IX | PREPARE TO REMOVE EVAPORATOR | .20137 | SYSTEM | |
| 6 | PMU-1-8592 | REMOVE AND INSTALL BOLT | .34880 | SYSTEM | |
| 7 | PMN-10-XII | REMOVE AND INSTALL EVAPORATOR | .35716 | SYSTEM | |
| 8 | PdV-1-X | PUT EVAPORATOR INTO OPERATION | .53794 | SYSTEM | |
| 9 | VT-1 | CHARGE 25-99 TON AIR CONDITIONING SYSTEM AFTER REPAIR | .62145 .96725 | SYSTEM SYSTEM | |
| 10 | PMV-1-II | CHECK OPERATION OF SYSTEM | .95211 | SYSTEM | |
| 11 | PWA-5-II | MATERIAL HANDLING | .10359 | SYSTEM | |
| VT-12 = 5.34574 HRS PER SYSTEM | | | | | |

VT-13 REMOVE AND INSTALL RECEIVER VALVE OR KING VALVE IN A OPEN (CENTRAL COMPRESSION) SYSTEM. AVG. 50 TON AIR CONDITIONING SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|--------------------------------|------------|--|------------------|------------------|-----|
| 1 | PMV-1-XIII | REMOVE AND INSTALL VALVE OR RECEIVER FLANGES | .58148 | SYSTEM | |
| 2 | PMN-10-XII | REMOVE AND INSTALL RECEIVER | .17858 | SYSTEM | |
| 3 | PMV-1-II | CHECK OPERATION OF SYSTEM | .95211 | SYSTEM | |
| 4 | VT-1 | CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM | .62145 .64413 | SYSTEM SYSTEM | |
| 5 | VT-4 | PUMP DOWN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM | .27949 .70206 | SYSTEM SYSTEM | |
| VT-13 = 3.95929 HRS PER SYSTEM | | | | | |

VT-14 REMOVE AND INSTALL THERMOSTATIC EXPANSION VALVE IN
A 25 TO 99 TON OPEN (CENTRAL COMPRESSION) AIR
CONDITIONING SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|--------------------------------|------------|--|------------------|------------------|-----|
| 1 | VT-3 | PUMP DOWN SYSTEM INTO RECEIVER | .59120 | SYSTEM | |
| 2 | PMQ-10-VII | REMOVE AND INSTALL FITTING | .93412 | SYSTEM | |
| 3 | PMU-1-8010 | PLUG AND UNPLUG PORT OPENINGS | .15720 | SYSTEM | |
| 4 | PMV-1-XI | PREPARE TO REMOVE EXPANSION VALVE | .35852 | SYSTEM | |
| 5 | PMU-1-8011 | REMOVE AND INSTALL EXPANSION VALVE | .07320 | SYSTEM | |
| 6 | PMV-1-XII | PUT EXPANSION VALVE INTO OPERATION | .23417 | SYSTEM | |
| 7 | VT-1 | CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM | .62145 .94725 | SYSTEM SYSTEM | |
| 8 | 4211 | CHECK OPERATION OF SYSTEM | .29200 | SYSTEM | |
| 9 | PMA-9-II | MATERIAL HANDLING | .10359 | SYSTEM | |
| VT-14 = 3.91277 HRS PER SYSTEM | | | | | |

VT-15 REMOVE AND INSTALL STRAINER OR DRYER IN A 25-99
TON OPEN (CENTRAL COMPRESSION) AIR CONDITIONING
SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|-----------------------------------|------------|--|--------|-----------|-----|
| 1 | VT-3 | PUMP SYSTEM DOWN INTO RECEIVER | .39120 | COMPONENT | |
| 2 | PMU-1-8000 | REMOVE AND INSTALL SCREWS | .21360 | COMPONENT | |
| 3 | PMV-1-XV | PREPARE TO REMOVE DRYER/STRAINER | .34466 | COMPONENT | |
| 4 | PMU-1-8011 | REMOVE AND INSTALL DRYER/STRAINER | .07320 | COMPONENT | |
| 5 | PMU-1-8010 | REMOVE AND INSTALL DRYER/STRAINER INSERT | .07800 | COMPONENT | |
| 6 | PMV-1-XVI | PUT DRYER/STRAINER INTO OPERATION | .26959 | COMPONENT | |
| 7 | PMA-9-I | MATERIAL HANDLING | .04906 | COMPONENT | |
| VT-15 = 1.63999 HRS PER COMPONENT | | | | | |

VT-16 INSTALL NEW WINDOW AIR CONDITIONER (1/2-2 TONS)
IN WINDOW WITH RAISABLE SASH.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|------------------------------------|------------------|------------|-----|
| 1 | PWMU-1-8021 | REMOVE CARDBOARD CONTAINER | .02450 | JOB | |
| 2 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS | .12460 | JOB | |
| 3 | PWMU-1-8010 | REMOVE AND INSTALL PANEL | .02620 | JOB | |
| 4 | PWN-10-XII | REMOVE AND INSTALL UNIT IN CABINET | .35716 | JOB | |
| 5 | PWMU-1-8552 | REMOVE BOLT FROM CRATE | .04360 | JOB | |
| 6 | PWMU-1 8003 | RAISE AND LOWER WINDOW | .00400 | JOB | |
| 7 | PWMU-1-8021 | INSTALL CABINET IN WINDOW | .02450 | JOB | |
| 8 | PWMU-1-8552 | INSTALL LEVELING ARM | .00720 | JOB | |
| 9 | PWMU-1-8553 | LOOSEN AND TIGHTEN LEVELING SCREW | .03400 | JOB | |
| 10 | PWMU-1-8100 | MEASURE, MARK AND CUT FILLER PANEL | .00202 .05330 | JOB JOB | |
| 11 | PWMU-1-8010 | INSTALL FILLER PANEL | .02620 | JOB | |
| 12 | PWMU-1-8010 | INSTALL WEATHER STRIPPING | .03930 | JOB | |
| 13 | PWMU-1-8003 | INSTALL CAULKING | .01200 | JOB | |
| 14 | PWMU-1-8010 | INSTALL PLUG | .01310 | JOB | |
| 15 | 4211 | CHECK OPERATION OF UNIT | .20200 | JOB | |
| 16 | PWA-3-II | MATERIAL HANDLING | .31077 | JOB | |

VT-16 = 1.47323 HRS PER JOB

VT-17 REMOVE WINDOW AIR CONDITIONER (1/2-2 TONS) FROM
RAISABLE WINDOW.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|----------------------------|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE FACE PANEL SCREWS | .07120 | JOB | |
| 2 | PWMU-1-8010 | REMOVE FACE PANEL | .01310 | JOB | |
| 3 | PWN-10-XII | REMOVE UNIT FROM CABINET | .17058 | JOB | |
| 4 | PWMU-1-8003 | RAISE AND LOWER WINDOW | .00400 | JOB | |
| 5 | PWMU-1-8010 | REMOVE WEATHER STRIPPING | .01310 | JOB | |
| 6 | PWMU-1-8010 | REMOVE FILLER PANEL | .02620 | JOB | |
| 7 | PWMU-1-8553 | LOOSEN LEVELING SCREW | .01740 | JOB | |
| 8 | PWMU-1-8021 | REMOVE CABINET FROM WINDOW | .02450 | JOB | |
| 9 | PWMU-1-8022 | INSTALL UNIT IN CABINET | .10280 | JOB | |
| 10 | PWMU-1-8010 | INSTALL FACE PANEL | .01310 | JOB | |
| 11 | PWMU-1-8000 | INSTALL SCREWS | .07120 | JOB | |
| 12 | PWA-3-I | MATERIAL HANDLING | .06906 | JOB | |

VT-17 = .60426 HRS PER JOB

VT-18 REMOVE SOLID BEARING AND INSTALL SPLIT TYPE BEARING ON CENTRIFUGAL (SQUIRREL CAGE) FAN SHAFT.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|------------------|------------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .10680 | JOB | |
| 2 | PWMU-1-8012 | REMOVE AND INSTALL ACCESS PANEL | .03560 | JOB | |
| 3 | PWMU-1-8552 | REMOVE AND INSTALL OIL FILLER TUBE | .04360 | JOB | |
| 4 | PWMU-1-8000 | REMOVE AND INSTALL BOLT | .03560 | JOB | |
| 5 | PWMU-1-8012 | REMOVE AND INSTALL BEARING CAP | .01780 | JOB | |
| 6 | PWMU-1-8000 | LOOSEN AND TIGHTEN BEARING RETAINER BOLT | .01780 | JOB | |
| 7 | PWMU-1-.011 | MOVE BEARING DOWN SHAFT | .03660 | JOB | |
| 8 | PWMU-1-8000 | REMOVE AND INSTALL HOUSING NUTS | .07120 | JOB | |
| 9 | PWMU-1-8005 | REMOVE AND INSTALL HOUSING BOLTS | .01600 | JOB | |
| 10 | PWMU-1-8012 | REMOVE AND INSTALL BEARING HOUSING | .01780 | JOB | |
| 11 | PWEA-4-I | BURN HOUSING WITH TORCH | .00960 .04035 | JOB JOB | |
| 12 | PWMU-1-8000 | REMOVE AND INSTALL BEARING NUTS | .07120 | JOB | |
| 13 | PWMU-1-8005 | REMOVE AND INSTALL BEARING BOLTS | .01600 | JOB | |
| 14 | PWEA-4-II | BURN HOLES FOR HOUSING BOLTS | .10480 .05380 | JOB JOB | |
| 15 | PWN-3-VII | FILL OIL FILLER TUBE WITH OIL | .07887 .28760 | JOB JOB | |
| 16 | 4208 | CHECK OPERATION FOR BEARING | .04200 | JOB | |
| 17 | PWA-5-I | MATERIAL HANDLING | .13912 | JOB | |

VT-18 = 1.24314 HRS PER JOB

VT-19 DRAIN, REMOVE AND INSTALL END PLATES, PUNCH TUBES, AND FILL ABSORBER OR GENERATOR IN 100 TON ABSORPTION SYSTEM. USE LADDER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|-------------------|------------|-----|
| 1 | PMQ-19-VIII | REMOVE AND INSTALL PIPE FITTINGS | .54969 | JOB | |
| 2 | PMQ-20-II | DRAIN AND FILL TUBES | .76000 | JOB | |
| 3 | PWMU-1-8553 | REMOVE AND INSTALL NUT | 1.11360 | JOB | |
| 4 | PWN-10-XII | REMOVE AND INSTALL END PLATES | .71432 | JOB | |
| 5 | PMV-13-II | PUNCH 220 TUBES UP TO 14" LONG AND 1" O.D. | .02403 2.90400 | JOB JOB | |
| 6 | PWN-19-II | CUT GASKET * AVG. OF 2 GASKETS | .01564 .18503 | JOB JOB | |
| 7 | PWN-19-K5 | PUNCH HOLES IN GASKET | .00201 .23646 | JOB JOB | |
| 8 | PWMU-1-8010 | INSTALL GASKET | .02620 | JOB | |
| 9 | PWA-5-II | MATERIAL HANDLING | .41436 | JOB | |
| 10 | PWMU-1-8052 | GET, ASCEND, DESCEND, AND ASIDE LADDER | .04140 | JOB | |

VT-19 = 6.98584 HRS PER JOB

VT-20 DRAIN, REMOVE AND INSTALL END PLATES, PUNCH TUBES, AND FILL ABSORBER OR GENERATOR IN 300 TON ABSORPTION SYSTEM. USE LADDER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|-------------------|------------|-----|
| 1 | PMQ-19-VIII | REMOVE AND INSTALL PIPE FITTING | .54868 | JOB | |
| 2 | PMQ-20-II | DRAIN AND FILL TUBES | 1.90000 | JOB | |
| 3 | PMU-1-8552 | REMOVE AND INSTALL NUT | 1.39520 | JOB | |
| 4 | PMU-10-IV | REMOVE AND INSTALL END PLATES | 1.36640 | JOB | |
| 5 | PMU-13-II | PUNCH TUBES UP TO 25" LONG AND 1" O.D. | .02408 5.20000 | JOB JOB | |
| 6 | PMU-19-II | CUT AVG. OF 2 GASKETS | .01564 .18508 | JOB JOB | |
| 7 | PMU-19-R5 | PUNCH 32 HOLES IN GASKET | .00201 .23648 | JOB JOB | |
| 8 | PMU-1-8010 | INSTALL GASKET | .02620 | JOB | |
| 9 | PMA-5-II | MATERIAL HANDLING | .41436 | JOB | |
| 10 | PMU-1-8052 | GET, ASCEND, DESCEND, AND ASIDE LADDER | .04140 | JOB | |

VT-20 = 11.43553 HRS PER JOB

VT-21 REMOVE AND INSTALL DISPOSABLE TYPE FILTER IN INDIVIDUAL OVERHEAD UNIT-- LADDER USED.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL NUT OR SCREW | .07120 | JOB | |
| 2 | PMU-1-8012 | REMOVE AND INSTALL PANEL | .01780 | JOB | |
| 3 | PMU-1-8012 | REMOVE AND INSTALL FILTER | .01780 | JOB | |
| 4 | PMA-5-II | MATERIAL HANDLING | .10359 | JOB | |
| 5 | PMU-1-8052 | GET, ASCEND, DESCEND, AND ASIDE LADDER | .02070 | JOB | |

VT-21 = .23109 HRS PER JOB

VT-22 REMOVE AND INSTALL A SET OF THREE BELTS ON A COMPRESSOR IN A OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|-------------------------------|------------|---|--------|--------|-----|
| 1 | 2388 | TURN POWER ON AND OFF | .00250 | SYSTEM | |
| 2 | PMU-1-8000 | REMOVE AND INSTALL SCREWS ON BELT GUARD | .07120 | SYSTEM | |
| 3 | PMU-1-8021 | REMOVE AND INSTALL BELT GUARD | .04900 | SYSTEM | |
| 4 | PMU-1-8553 | LOOSEN AND TIGHTEN MOTOR BASE BOLTS | .06940 | SYSTEM | |
| 5 | PMU-1-8553 | LOOSEN AND TIGHTEN ADJUSTING SCREW | .05220 | SYSTEM | |
| 6 | PMU-1-8011 | PRY MOTOR TO LOOSEN AND TIGHTEN | .07320 | SYSTEM | |
| 7 | PMU-1-8021 | REMOVE AND INSTALL BELTS | .14700 | SYSTEM | |
| 8 | 4209 | CHECK OPERATION | .14700 | SYSTEM | |
| 9 | PMU-5-1 | MATERIAL HANDLING | .06900 | SYSTEM | |
| VT-22 = .70086 HRS PER SYSTEM | | | | | |

VT-23 REMOVE AND INSTALL FLOAT LINKAGE IN WATER TOWER OR CONDENSER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----------------------------|------------|-----------------------------------|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .14240 | JOB | |
| 2 | PMU-1-8012 | REMOVE AND INSTALL PANEL | .07320 | JOB | |
| 3 | PMU-1-8013 | REMOVE AND INSTALL FLOAT ASSEMBLY | .04620 | JOB | |
| 4 | 5601 | ADJUST FLOAT LINKAGE | .08000 | JOB | |
| 5 | 4209 | CHECK OPERATION | .14700 | JOB | |
| VT-23 = .50880 HRS PER JOB | | | | | |

VT-24 INSTALL NEW WINDOW AIR CONDITIONING UNIT (1/2 TO 3 TONS) IN FIXED STEEL SASH WINDOW.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|--------------------------------|-------------|---------------------------------------|------------------|------------|-----|
| 1 | PWMU-1-8021 | REMOVE LANDSCAPE CONTAINER | .02450 | JOB | |
| 2 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS | .12460 | JOB | |
| 3 | PWMU-1-8010 | REMOVE AND INSTALL PANEL | .02620 | JOB | |
| 4 | PWMU-10-XII | REMOVE AND INSTALL UNIT IN CABINET | .35716 | JOB | |
| 5 | PWEA-32-I | LAYOUT AREA TO BE REMOVED FROM WINDOW | .20040 | JOB | |
| 6 | PWMU-1-8013 | REMOVE WINDOW PANES | .13860 | JOB | |
| 7 | PWEA-4-III | CUT FRAME WITH TORCH | .00960 .02490 | JOB JOB | |
| 8 | PWMU-1-8552 | REMOVE BOLT FROM CRATE | .04360 | JOB | |
| 9 | PWMU-1-8000 | INSTALL MOUNTING FRAME | .03960 | JOB | |
| 10 | PWMU-1-8021 | INSTALL CABINET IN WINDOW | .02450 | JOB | |
| 11 | PWMU-1-8552 | INSTALL LEVELING ARM | .00720 | JOB | |
| 12 | PWMU-1-8553 | LOOSEN AND TIGHTEN LEVELING SCREW | .03480 | JOB | |
| 13 | PWMU-1-8100 | MEASURE, MARK AND CUT FILLER PANEL | .00202 .07993 | JOB JOB | |
| 14 | PWMU-1-8010 | INSTALL FILLER PANEL | .03930 | JOB | |
| 15 | PWMU-1-8010 | INSTALL WEATHER STRIPPING | .03930 | JOB | |
| 16 | PWMU-1-8003 | INSTALL CAULKING | .01200 | JOB | |
| 17 | PWMU-1-8010 | INSTALL PLUG | .01310 | JOB | |
| 18 | PWMU-1-8000 | SECURE PANELS TO WINDOW | .00900 | JOB | |
| 19 | 4211 | CHECK OPERATION OF UNIT | .58400 | JOB | |
| 20 | 5607 | ADJUST UNIT | .10200 | JOB | |
| 21 | PHA-3-I | MATERIAL HANDLING | .13012 | JOB | |
| VT-24 2.23044 HRS PER JOB | | | | | |

VT-25 CLEAN SHELL AND TUBE WATER COOLED CONDENSER OR CHILLED WATER EVAPORATOR (100 TO 200 TON SYSTEM). --INCLUDES DRAIN AND FILL; REMOVE AND INSTALL END PLATES; PUNCH CLEAN TUBES; FABRICATE AND INSTALL GASKETS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|--|------------------|------------|-----|
| 1 | PMQ-19-VIII | REMOVE AND INSTALL PILLING PIPE | .54868 | JOB | |
| 2 | PMQ-20-II | DRAIN AND FILL TUBES | .38000 | JOB | |
| 3 | PMU-1-8552 | REMOVE AND INSTALL NUT | 1.00280 | JOB | |
| 4 | PMN-10-XII | REMOVE AND INSTALL PLATE COVER | .71432 | JOB | |
| 5 | PMV-13-I | PUNCH CLEAN TUBE UP TO 14" LONG, UP TO 1" O.D. | .02408 .74800 | JOB JOB | |
| 6 | PMV-13-I | DRY TUBE WITH RAG | .02408 .74800 | JOB JOB | |
| 7 | PMN-19-II | CUT 2 GASKETS UP TO 2 SQ. FT. EACH | .01564 .18308 | JOB JOB | |
| 8 | PMN-19-K5 | MARK AND PUNCH 32 HOLES IN GASKET | .00201 .23648 | JOB JOB | |
| 9 | PMU-1-8010 | INSTALL GASKETS | .02620 | JOB | |
| 10 | PMA-3-II | MATERIAL HANDLING | .41436 | JOB | |

VT-25 = 5.06972 HRS PER JOB

VT-26 SEASONAL (FALL) OPERATION--SHUT DOWN AIR HANDLING UNIT; COOLING ONLY.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|---------------------------|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .28480 | JOB | |
| 2 | PMU-1-8012 | REMOVE AND INSTALL PANEL | .03360 | JOB | |
| 3 | PMG-40-XI | SENSORY INSPECT BEARINGS | .08420 | JOB | |
| 4 | PMG-40-I | GREASE BEARINGS | .03025 | JOB | |
| 5 | PMG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |
| 6 | 5603 | TURN SWITCH OFF | .02100 | JOB | |

VT-26 = .46960 HRS PER JOB

VT-27 SEASONAL (FALL) OPERATION--SHUT DOWN COMPRESSOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|--|--------|-------|-----|
| 1 | PMV-1-VIII | PREPARE AND PUMP DOWN SYSTEM INTO RECEIVER | .40880 | JOB | |
| 2 | 4205 | CHECK SYSTEM FOR LEAKS AND NOTE | .06300 | JOB | |
| 3 | 5603 | TURN SWITCH OFF | .02100 | JOB | |
| 4 | PMG-40-XII | FILL OUT INSPECTOR'S REPORT | .01185 | JOB | |

VT-27 = .49665 HRS PER JOB

VT-28

CLEAN SHELL AND TUBE CONDENSER OR CHILLED WATER
EVAPORATOR (300 TO 400 TON SYSTEM).
--INCLUDES DRAIN AND FILL REMOVE AND INSTALL END
PLATES; PUNCH AND CLEAN TUBES; FABRICATE AND
INSTALL GASKETS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|---------|-------------|--|---------------------|------------|-----|
| 1 | PWC-19-VICI | REMOVE AND INSTALL PIPE FITTINGS | .54868 | JOB | |
| 2 | PWC-19-II | DRAIN AND FILL TUBES | .68400 | JOB | |
| 3 | PWPU-1-8592 | REMOVE AND INSTALL NUT | 1.13360 | JOB | |
| 4 | PWN-19-KII | REMOVE AND INSTALL COVER PLATE | .71432 | JOB | |
| 5 | PWV-19-II | PUNCH CLEAN TUBE UP TO 25' LONG, UP TO 1" O.D. | .02409 2.31000 | JOB JOB | |
| 6 | PWV-19-II | DRY TUBE WITH RAG | .02400 2.31000 | JOB JOB | |
| 7 | PWN-19-II | CUT 2 GASKETS OVER 2 SQ. FT. | .01944 .18308 | JOB JOB | |
| 8 | PWN-19-KS | MARK AND PUNCH 32 HOLES IN GASKET | .00201 .23648 | JOB JOB | |
| 9 | PWPU-1-8010 | INSTALL GASKET | .02620 | JOB | |
| 10 | PWA-9-II | MATERIAL HANDLING | .41436 | JOB | |
| VT-28 = | | | 8.62852 HRS PER JOB | | |

VT-29

SEASONAL (FALL) OPERATION--SHUT DOWN EVAPORATIVE
CONDENSER OR METAL COOLING TOWER (100 TO 199 TON
AIR CONDITIONING SYSTEM)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|---------|-------------|---------------------------|--------------------|-------|-----|
| 1 | PWPU-1-8000 | REMOVE AND INSTALL SCREW | .21360 | JOB | |
| 2 | PWPU-1-8011 | REMOVE AND INSTALL PANEL | .14640 | JOB | |
| 3 | PWG-40-KI | SENSORY INSPECT BEARINGS | .08420 | JOB | |
| 4 | 2140 | DRAIN WATER | .49000 | JOB | |
| 5 | 5603 | TURN SWITCH OFF | .02100 | JOB | |
| 6 | PWG-40-KII | FILL OUT INSPECTOR REPORT | .01105 | JOB | |
| VT-29 = | | | .96705 HRS PER JOB | | |

VT-30 SEASONAL (FALL) OPERATION--SHUT DOWN EVAPORATOR,
CONDENSER OR METAL COOLING TOWER (3 TO 99 TON
SYSTEM).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---------------------------|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREWS | .10680 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PANEL | .07320 | JOB | |
| 3 | PMG-40-XI | SENSORY INSPECT BEARINGS | .08420 | JOB | |
| 4 | 2148 | DRAIN WATER | .07350 | JOB | |
| 5 | PMG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |
| 6 | 5603 | TURN SWITCH OFF | .02100 | JOB | |

VT-30 = .37245 HRS PER JOB

VT-31 SEASONAL (FALL) OPERATION--SHUT DOWN AIR COOLED
CONDENSER; PER PAN ASSEMBLY.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---------------------------|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .14240 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PANEL | .07320 | JOB | |
| 3 | PMG-40-XI | SENSORY INSPECT BEARINGS | .08420 | JOB | |
| 4 | PMG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |
| 5 | 5603 | TURN OFF SWITCH | .02100 | JOB | |

VT-31 = .33455 HRS PER JOB

VT-32 SEASONAL (FALL) OPERATION--SHUT DOWN WOOD COOLING
TOWER (200-299 TON) OR METAL COOLING TOWER (100-
199 TON).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .28480 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL SCREEN | .29280 | JOB | |
| 3 | PMG-40-XI | SENSORY INSPECT BEARINGS AND GEAR BOXES | .50520 | JOB | |
| 4 | PMV-2-IV | PREPARE TOWER TO DRAIN | .08732 | JOB | |
| 5 | 5603 | TURN OFF POWER | .02100 | JOB | |
| 6 | PMG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |

VT-32 = 1.20487 HRS PER JOB

VT-33 SEASONAL (FALL) OPERATION--SHUT DOWN WOOD COOLING
TOWER (25-199 TON) OR METAL COOLING TOWER
(3-99 TON).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|--------|-------|-----|
| 1 | PWU-1-8000 | REMOVE AND INSTALL SCREW | .14240 | JOB | |
| 2 | PWU-1-8011 | REMOVE AND INSTALL SCREEN | .14440 | JOB | |
| 3 | PWG-40-XI | SENSORY INSPECT BEARING AND GEAR BOXES | .25240 | JOB | |
| 4 | PWY-2-IV | PREPARE TOWER TO DRAIN | .08732 | JOB | |
| 5 | 5403 | TURN OFF POWER | .02100 | JOB | |
| 6 | PWG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |

VT-33 = .66347 HRS PER JOB

VT-34 SEASONAL (FALL) OPERATION--SHUT DOWN PACKAGE UNIT
(10-49 TON).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|--------|-------|-----|
| 1 | PWU-1-8000 | REMOVE AND INSTALL SCREW | .10680 | JOB | |
| 2 | PWU-1-8011 | REMOVE AND INSTALL PANEL | .07320 | JOB | |
| 3 | PWY-1-VIII | PREPARE AND RUN COMPRESSOR TO PUMP DOWN INTO RECEIVER | .40080 | JOB | |
| 4 | PWG-40-XI | SENSORY INSPECT BEARINGS | .12630 | JOB | |
| 5 | 5403 | TURN POWER OFF | .02100 | JOB | |
| 6 | PWG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |

VT-34 = .74185 HRS PER JOB

VT-35 SEASONAL (FALL) OPERATION--SHUT DOWN WINDOW AIR
CONDITIONING UNIT

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|--------|-------|-----|
| 1 | 3842 | WALK AROUND WORK AREA TO DIFFERENT LOCATION | .01500 | JOB | |
| 2 | 2581 | LOCATE UNIT IN COMPARTMENT AND VISUALLY INSPECT | .00464 | JOB | |
| 3 | 2389 | TURN OFF SWITCH | .00103 | JOB | |
| 4 | 2235 | UNPLUG UNIT FROM POWER SOURCE | .00099 | JOB | |
| 5 | 2648 | TIE UP ELECTRICAL CORD | .00185 | JOB | |
| 6 | PWU-1-8052 | INSTALL, ASCEND, DESCEND AND REMOVE STEP LADDER | .02070 | JOB | |
| 7 | 5523 | OBTAIN AND ASIDE COVER AND ROLL OF TAPE | .01486 | JOB | |
| 8 | PWU-1-8012 | PLACE COVER OVER UNIT | .00890 | JOB | |
| 9 | 4818 | TAPE EDGES OF COVER | .10450 | JOB | |
| 10 | PWG-40-XII | FILL OUT RECORD SHEET | .01185 | JOB | |

VT-35 = .12432 HRS PER JOB

VT-38

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----------------------------|-------------|--------------------------------------|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .08900 | JOB | |
| 2 | PWMU-1-8021 | REMOVE AND INSTALL PANEL | .04900 | JOB | |
| 3 | PWG-40-XI | SENSORY INSPECT BEARINGS | .08420 | JOB | |
| 4 | PWMU-1-9010 | REMOVE AND INSTALL DISPOSABLE FILTER | .01310 | JOB | |
| 5 | PWG-40-XII | FILL OUT INSPECTION REPORT | .01185 | JOB | |
| VT-36 = .24715 HRS PER JOB | | | | | |

VT-37

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--------------------------------------|------------------|------------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .21360 | J09 | |
| 2 | PWMU-1-8011 | REMOVE AND INSTALL PANEL | .14640 | J08 | |
| 3 | PWG-40-I | GREASE BLOWER BEARING FITTINGS | .02420 | J08 | |
| 4 | PWG-40-II | LUBRICATE OIL CUP | .03516 | J09 | |
| 5 | PWG-40-X | SENSORY INSPECT MOTOR | .02193 | J08 | |
| 6 | PWG-40-XI | SENSORY INSPECT BLOWER | .04210 | J08 | |
| 7 | PWMU-1-8020 | WIPE COMPRESSOR AND MOTOR | .16880 | J08 | |
| 8 | PWMU-1-8032 | INSPECT SIGHT GLASS | .00790 | J08 | |
| 9 | 4210 | INSPECT FOR LEAKS | .22500 | J09 | |
| 10 | PWMU-1-8021 | REMOVE AND INSTALL DISPOSABLE FILTER | .09800 | J09 | |
| 11 | 5607 | ADJUST FAN ASSEMBLY MOTOR PULLEY | .10200 | J09 | |
| 12 | PWN-3-VII | ADD OIL TO CRANKCASE | .07887 .02896 | J03 J08 | |
| 13 | PWG-40-XIII | FILL OUT INSPECTION REPORT | .01375 | J08 | |

VT-37 = 1.20667 HRS PER J09

VT-39

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V39 |
|----------------------------|-------------|--------------------------------------|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREEN | .28480 | J08 | |
| 2 | PMU-1-8012 | REMOVE AND INSTALL PANEL | .03560 | J08 | |
| 3 | PMG-40-XI | SENSORY INSPECTION FAN MOTOR | .08420 | J05 | |
| 4 | PMG-40-I | GREASE BEARINGS | .02420 | J03 | |
| 5 | 3604 | ADJUST BELT TENSION | .07100 | J03 | |
| 6 | PMU-1-8010 | REMOVE AND INSTALL DISPOSABLE FILTER | .05240 | J08 | |
| 7 | PMG-40-XIII | FILL OUT INSPECTION REPORT | .01375 | J05 | |
| VT-32 " .56595 HRS PER JOB | | | | | |

VT-39

RECURRING MAINTENANCE--AIR-COOLED CONDENSER: PER
PAN ASSEMBLY.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|-------------------------------|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .24920 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PANEL | .14440 | JOB | |
| 3 | PMG-40-7 | LUBRICATE BEARINGS | .02420 | JOB | |
| 4 | S607 | ADJUST BELT TENSION | .10200 | JOB | |
| 5 | PMG-40-XI | SENSORY INSPECT PAN AND MOTOR | .08420 | JOB | |
| 6 | PMG-40-XII | FILL OUT INSPECTOR REPORT | .01180 | JOB | |

VT-39 = .61785 HRS PER JOB

VT-40

RECURRING MAINTENANCE--EVAPORATIVE COOLER OR METAL
COOLING TOWER (3-24 TON).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .21360 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PANEL | .14440 | JOB | |
| 3 | PMG-40-I | LUBRICATE BEARINGS, PAN, MOTORS, AND PUMP | .03630 | JOB | |
| 4 | S607 | ADJUST BELT TENSION | .10200 | JOB | |
| 5 | S601 | ADJUST FLOAT | .04000 | JOB | |
| 6 | PMG-40-XI | SENSORY INSPECT BEARINGS | .12630 | JOB | |
| 7 | PMG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |

VT-40 = .67835 HRS PER JOB

VT-41 RECURRING MAINTENANCE--AIR OR WATER-COOLED PACKAGE
TYPE/SELF-CONTAINED AIR CONDITIONING SYSTEM
(3-9 TON).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--------------------------------------|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .21360 | J08 | |
| 2 | PWMU-1-8021 | REMOVE AND INSTALL PANEL | .09800 | J08 | |
| 3 | PWG-40-I | GREASE BLOWER BEARING FITTING | .01815 | J08 | |
| 4 | PWG-40-II | LUBRICATE OIL CUP | .02344 | J08 | |
| 5 | PWG-40-X | SENSORY INSPECT FAN | .02193 | J08 | |
| 6 | PWG-40-XI | SENSORY INSPECT BLOWER | .04210 | J08 | |
| 7 | PWMU-1-8028 | WIPE MOTOR AND CONDENSER | .16890 | J08 | |
| 8 | PWMU-1-8032 | INSPECT SIGHT GLASS | .00790 | J08 | |
| 9 | 4210 | INSPECT FOR LEAKS | .07500 | J08 | |
| 10 | PWMU-1-8010 | REMOVE AND INSTALL DISPOSABLE FILTER | .05240 | J08 | |
| 11 | PWG-40-XIII | FILL OUT INSPECTION REPORT | .01375 | J08 | |

VT-41 = .73507 HRS PER J08

VT-42 RECURRING MAINTENANCE--COMPRESSOR--OPEN (CENTRAL
COMPRESSION) AIR CONDITIONING SYSTEM. (3-24 TON
SYSTEM)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|-------------------------------|--------|-------|-----|
| 1 | PWMU-1-8023 | WIPE COMPRESSOR AND MOTOR | .16690 | J08 | |
| 2 | 5607 | ADJUST BELT TENSION | .10200 | J08 | |
| 3 | PWMU-1-8032 | INSPECT SIGHT GLASS AND GAGES | .02370 | J08 | |
| 4 | PWG-40-I | LUBRICATE BEARINGS | .01210 | J08 | |
| 5 | PWN-3-VII | ADD OIL | .07887 | J08 | |
| | | | .01448 | J08 | |
| 6 | 4210 | INSPECT FOR LEAKS | .07500 | J08 | |
| 7 | 4211 | CHECK FOR PROPER OPERATION | .29200 | J08 | |
| 8 | PWG-40-XIII | FILL OUT INSPECTION REPORT | .01375 | J08 | |

VT-42 = .73070 HRS PER J08

VT-43

CLEAN AND LUBRICATE WINDOW AIR CONDITIONING UNIT.
 --INCLUDES REMOVE AND INSTALL PANELS CLEAN INSIDE
 CABINET; LUBRICATE BEARING; INSPECT FAN AND
 BLOWER; REPLACE DISPOSABLE FILTER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .08900 | JOB | |
| 2 | PMU-1-8021 | REMOVE AND INSTALL PANEL | .04900 | JOB | |
| 3 | PMU-10-XII | PULL UNIT PARTIALLY INSIDE WINDOW AND SLIP BACK | .39716 | JOB | |
| 4 | PMU-1-8028 | CLEAN UNIT INSIDE CABINET | .08440 | JOB | |
| 5 | PMG-40-I | GREASE BLOWER BEARING FITTING | .01210 | JOB | |
| 6 | PMG-40-II | LUBRICATE OIL CUP | .02344 | JOB | |
| 7 | PMG-40-X | SENSORY INSPECT FAN | .07193 | JOB | |
| 8 | PMG-40-XI | SENSORY INSPECT BLOWER | .04210 | JOB | |
| 9 | PMU-1-8010 | REMOVE AND INSTALL DISPOSABLE FILTER | .02620 | JOB | |
| 10 | PMU-9-II | MATERIAL HANDLING | .20718 | JOB | |

VT-43 = .91251 HRS PER JOB

VT-44

RECURRING MAINTENANCE--COMPRESSOR--OPEN (CENTRAL
 COMPRESSION) AIR CONDITIONING SYSTEM (25 TON AND
 OVER SYSTEM)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|----------------------------------|------------------|------------|-----|
| 1 | PMU-1-8026 | WIPE COMPRESSOR AND MOTOR | .16000 | JOB | |
| 2 | 8408 | CHECK MOTOR ALIGNMENT AND ADJUST | .10000 | JOB | |
| 3 | PMU-1-8032 | INSPECT SIGHT GLASS AND GAUGES | .03160 | JOB | |
| 4 | PMG-40-I | LUBRICATE BEARINGS | .03630 | JOB | |
| 5 | PMU-3-VII | ADD OIL | .07887 .01440 | JOB JOB | |
| 6 | PMQ-20-II | DRAIN AIR TANK | .01920 | JOB | |
| 7 | 4210 | INSPECT FOR LEAKS | .15000 | JOB | |
| 8 | 4211 | CHECK FOR PROPER OPERATION | .29200 | JOB | |
| 9 | PMG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |

VT-44 = .98900 HRS PER JOB

VT-45 RECURRING MAINTENANCE--EVAPORATIVE CONDENSER OR
METAL COOLING TOWER (25 TON AND OVER AIR CONDIT-
IONING SYSTEM)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|--------|-------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .32040 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PANEL | .29280 | JOB | |
| 3 | PMU-40-I | LUBRICATE BEARINGS, FAN, MOTOR AND PUMP | .07260 | JOB | |
| 4 | 5607 | ADJUST BELT TENSION | .10200 | JOB | |
| 5 | 5601 | ADJUST FLOAT | .04000 | JOB | |
| 6 | PMU-40-XI | SENSORY INSPECT BEARINGS | .25260 | JOB | |
| 7 | PMU-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |

VT-45 = 1.09415 HRS PER JOB

VT-46 CLEAN, INSPECT, ADJUST AND LUBRICATE PACKAGE-TYPE/
SELF-CONTAINED AIR CONDITIONING SYSTEM (3-4* TON)
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN
INTERIOR AND CENTRIFUGAL (SQUIRREL CAGE) FAN;
INSPECT; MAKE ADJUSTMENTS; LUBRICATE MOVING PARTS;
AND CHARGE SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|------------------|------------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .21360 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PANEL | .14640 | JOB | |
| 3 | PMU-40-I | LUBRICATE BLOWER BEARINGS | .02420 | JOB | |
| 4 | PMU-40-II | LUBRICATE OIL CUP | .03516 | JOB | |
| 5 | PMU-40-X | SENSORY INSPECT PUMP | .02193 | JOB | |
| 6 | PMU-40-XI | SENSORY INSPECT BLOWER | .04210 | JOB | |
| 7 | PMU-40-XXI | CLEAN SQUIRREL CAGE FAN | .25882 | JOB | |
| 8 | PMU-1-8028 | WIPE MOTOR AND COMPRESSOR | .16980 | JOB | |
| 9 | PMU-1-8031 | BRUSH COOLING COILS | .27400 | JOB | |
| 10 | PMU-1-8032 | INSPECT SIGHT GLASS | .00790 | JOB | |
| 11 | 4210 | INSPECT FOR LEAKS | .22500 | JOB | |
| 12 | PMU-1-8021 | REMOVE AND INSTALL DISPOSABLE FILTER | .09800 | JOB | |
| 13 | PMU-1-8011 | REMOVE AND INSTALL BELT | .07320 | JOB | |
| 14 | 5607 | ADJUST PULLEY | .10200 | JOB | |
| 15 | VT-1 | CHARGE PACKAGE-TYPE/SELF-CONTAINED AIR CONDITIONING SYSTEM REPAIR | .62145 .37890 | JOB JOB | |
| 16 | VT-2 | PUMP DOWN COMPRESSOR | .38220 | JOB | |
| 17 | PMU-3-V | ADD OIL TO CRANKCASE | .02265 .02731 | JOB JOB | |
| 18 | PMU-1-8031 | CLEAN INTERIOR CABINET BY SCRAPING AND WIPING | .27400 | JOB | |

VT-46 = 3.39761 HRS PER JOB

VT-47 RECURRING MAINTENANCE--WOOD COOLING TOWER (25-99
TON AIR CONDITIONING SYSTEM)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .14240 | JOB | |
| 2 | PWMU-1-8011 | REMOVE AND INSTALL SCREEN | .14640 | JOB | |
| 3 | PWG-40-XV | CLEAN PAN | .04911 | JOB | |
| 4 | PWG-34-II | CLEAN, LUBRICATE, INSPECT AND ADJUST MOTOR | .04810 | JOB | |
| 5 | PWG-40-VI | ADD OIL TO GEAR BOX | .01428 | JOB | |
| 6 | PWMU-1-8003 | REMOVE AND INSTALL GEAR BOX PLUG | .01780 | JOB | |
| 7 | 5607 | ADJUST BELT TENSION | .10200 | JOB | |
| 8 | PWG-40-I | LUBRICATE PAN AND PUMP | .03630 | JOB | |
| 9 | PWG-40-XI | SENSORY INSPECT BEARINGS | .12630 | JOB | |
| 10 | 5601 | ADJUST FLOAT ASSEMBLY | .04000 | JOB | |
| 11 | PWG-40-XIII | FILL OUT INSPECTOR REPORT | .01375 | JOB | |

VT-47 = .73644 HRS PER JOB

VT-48 RECURRING MAINTENANCE--WOOD COOLING TOWER (500-999
TON AIR CONDITIONING SYSTEM)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .56960 | JOB | |
| 2 | PWMU-1-8011 | REMOVE AND INSTALL SCREEN | .29280 | JOB | |
| 3 | PWG-40-XV | CLEAN PAN | .19644 | JOB | |
| 4 | PWG-34-II | CLEAN, LUBRICATE, INSPECT AND ADJUST MOTOR | .19240 | JOB | |
| 5 | PWMU-1-8000 | REMOVE AND INSTALL GEAR BOX PLUG | .07120 | JOB | |
| 6 | PWG-40-VI | ADD OIL TO GEAR BOX | .02854 | JOB | |
| 7 | 5607 | ADJUST BELT TENSION | .40800 | JOB | |
| 8 | PWG-40-I | LUBRICATE BEARINGS | .07260 | JOB | |
| 9 | PWG-40-XI | SENSORY INSPECT BEARINGS | .25260 | JOB | |
| 10 | 5601 | ADJUST FLOAT ASSEMBLY | .08000 | JOB | |
| 11 | PWG-40-XIII | FILL OUT INSPECTOR REPORT | .05500 | JOB | |

VT-48 = 2.21919 HRS PER JOB

VT-49 CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (3-24 TON).
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING COILS AND AIR PLENUM; INSPECT; MAKE ADJUSTMENTS; LUBRICATE BEARINGS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|------------------|------------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .28480 | JOB | |
| 2 | PWMU-1-8012 | REMOVE AND INSTALL PANEL | .03560 | JOB | |
| 3 | PWG-40-XI | SENSORY INSPECTION SQUIRREL CAGE FAN AND MOTOR | .08420 | JOB | |
| 4 | PWG-40-XXIV | CLEAN SQUIRREL CAGE FAN | .38763 | JOB | |
| 5 | PWMU-1-8031 | CLEAN COOLING COILS | .27400 | JOB | |
| 6 | PWV-2-I | CLEAN AIR PLENUM | .18680 .02400 | JOB JOB | |
| 7 | PWG-40-I | GREASE FAN BEARINGS | .02420 | JOB | |
| 8 | 5674 | ADJUST FAN MOTOR PULLEYS | .07100 | JOB | |

VT-49 = 1.37223 HRS PER JOB

VT-50 CLEAN, INSPECT, ADJUST, LUBRICATE AND CHANGE OIL IN COMPRESSOR IN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM (3-24 TON)--INCLUDES WIPE COMPRESSOR AND MOTOR; INSPECT FOR LEAKS AND PROPER OPERATION; ADJUST BELTS; LUBRICATE MOTOR BEARING; DRAIN AND FILL CRANKCASE; AND CHARGE SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V36 |
|----|-------------|---|------------------|------------|-----|
| 1 | PWMU-1-8028 | WIPE COMPRESSOR AND MOTOR | .16980 | JOB | |
| 2 | PWMU-1-8010 | REMOVE AND INSTALL BELT | .02620 | JOB | |
| 3 | 5607 | ADJUST BELT TENSION AND ALIGNMENT | .10200 | JOB | |
| 4 | PWN-3-VII | DRAIN OIL FROM CRANKCASE | .07987 .01443 | JOB JOB | |
| 5 | PWN-3-VII | FILL CRANKCASE WITH OIL | .07887 .01448 | JOB JOB | |
| 6 | VT-2 | PREPARE AND RUN TO PUMP DOWN | .38220 | JOB | |
| 7 | PWMU-1-8032 | INSPECT SIGHT GLASS | .00790 | JOB | |
| 8 | VT-1 | CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM | .62145 .03789 | JOB JOB | |
| 9 | 4210 | INSPECT FOR LEAKS | .07500 | JOB | |
| 10 | PWG-40-I | LUBRICATE MOTOR BEARINGS | .01210 | JOB | |
| 11 | 4211 | CHECK FOR PROPER OPERATION | .29200 | JOB | |

VT-50 = 1.91224 HRS PER JOB

VT-31

CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (3-24 TON).
 --INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING AND HEATING COILS AND AIR PLENUM; INSPECT FAN AND MOTOR; ADJUST PULLEYS; LUBRICATE FAN BEARINGS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|------------------|------------|-----|
| 1 | PNMU-1-8000 | REMOVE AND INSTALL SCREW | .28480 | JOB | |
| 2 | PNMU-1-8012 | REMOVE AND INSTALL PANEL | .03560 | JOB | |
| 3 | PMG-40-XI | SENSORY INSPECTION SQUIRREL CAGE AND FAN AND MOTOR | .08420 | JOB | |
| 4 | PMG-40-XXIV | CLEAN SQUIRREL CAGE FAN | .38763 | JOB | |
| 5 | PNMU-1-8031 | CLEAN COOLING AND HEATING COILS | .54800 | JOB | |
| 6 | PMV-2-I | CLEAN AIR PLENUM (CLEAN AVG. OF 40 SQ. FT.) | .18680 .02400 | JOB JOB | |
| 7 | PMG-40-I | GREASE FAN BEARINGS | .02420 | JOB | |
| 8 | 5607 | ADJUST FAN MOTOR PULLEYS | .10200 | JOB | |

VT-31 = 1.67722 HRS PER JOB

VT-32

CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (25-99 TON).
 --INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING COILS AND PLENUM; INSPECT FAN AND MOTOR; ADJUST PULLEYS; LUBRICATE FAN BEARINGS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|------------------|------------|-----|
| 1 | PNMU-1-8000 | REMOVE AND INSTALL SCREW | .42720 | JOB | |
| 2 | PNMU-1-8013 | REMOVE AND INSTALL PANEL | .13860 | JOB | |
| 3 | PMG-40-XI | SENSORY INSPECT SQUIRREL CAGE FAN AND MOTOR | .08420 | JOB | |
| 4 | PMG-40-XXIV | CLEAN SQUIRREL CAGE FAN | .77526 | JOB | |
| 5 | PNMU-1-8031 | CLEAN COOLING COILS | 1.23300 | JOB | |
| 6 | PMV-2-I | CLEAN AIR PLENUM (AVG. OF 180 SQ. FT.) | .18680 .10800 | JOB JOB | |
| 7 | PMG-40-I | GREASE FAN BEARINGS | .03025 | JOB | |
| 8 | 5607 | ADJUST FAN MOTOR PULLEY | .10200 | JOB | |

VT-32 = 3.08531 HRS PER JOB

VT-53

CLEAN, INSPECT, ADJUST, LUBRICATE AND CHANGE OIL IN COMPRESSOR IN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM (COVER 100 TON)--INCLUDES WIPE COMPRESSOR AND MOTOR; INSPECT FOR LEAKS AND SAFETY DEVICES; ADJUST MOTOR ALIGNMENT; LUBRICATE MOTOR BEARINGS; DRAIN AND FILL CRANKCASE; CHANGE SYSTEM; AND REMOVE AND INSTALL DRYER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|-----------------------------|------------|---|-------------------|------------|-----|
| 1 | PMU-1-8028 | WIPE COMPRESSOR AND MOTOR | .16000 | JOB | |
| 2 | 5608 | CHECK AND ADJUST MOTOR ALIGNMENT COUPLINGS | .18000 | JOB | |
| 3 | PMG-40-I | LUBRICATE MOTOR AND COUPLING | .02420 | JOB | |
| 4 | PMN-3-VII | DRAIN OIL FROM CRANKCASE | .07887 .02896 | JOB JOB | |
| 5 | PMN-3-V | FILL CRANKCASE WITH OIL | .02269 .05462 | JOB JOB | |
| 6 | VT-2 | PREPARE AND RUN TO PUMP DOWN | .38220 | JOB | |
| 7 | PMU-1-8032 | INSPECT SIGHT GLASS | .01580 | JOB | |
| 8 | VT-1 | CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM REPAIR | .62145 1.89450 | JOB JOB | |
| 9 | 4210 | CHECK FOR LEAKS | .19000 | JOB | |
| 10 | 4207 | CHECK SAFETY DEVICES | .12600 | JOB | |
| 11 | PMQ-20-II | DRAIN WATER FROM AIR TANK | .01520 | JOB | |
| 12 | PMG-40-I | LUBRICATE AIR COMPRESSOR | .01210 | JOB | |
| 13 | VT-15 | REMOVE AND INSTALL DRYER | 1.83999 | JOB | |
| VT-53 = 5.42334 HRS PER JOB | | | | | |

VT-54 CLEAN, INSPECT, ADJUST AND LUBRICATE WOOD COOLING TOWER (25-99 TON).
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN INSIDE TOWER AND COMPONENTS WITH WATER HOSE, BRUSH AND/OR CLOTH; INSPECT PAN AND MOTOR; ADJUST MOTOR AND FLOAT; LUBRICATE PAN, MOTOR AND WATER PUMP.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|------------------|------------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .14240 | JOB | |
| 2 | PWMU-1-8011 | REMOVE AND INSTALL PANEL | .14640 | JOB | |
| 3 | PWMU-1-8012 | REMOVE AND INSTALL SLAT | .28480 | JOB | |
| 4 | PWMU-1-8006 | TIGHTEN FLANGE NUT | .05360 | JOB | |
| 5 | PWV-2-I | CLEAN INSIDE TOWER WITH WATER HOSE | .18480 .13200 | JOB JOB | |
| 6 | PWV-2-II | CLEAN INSIDE TOWER BY SCRAPING, BRUSHING AND WIPING | .82184 .67848 | JOB JOB | |
| 7 | PWG-40-IV | CLEAN PAN | .04911 | JOB | |
| 8 | PWG-40-I | LUBRICATE PAN | .01210 | JOB | |
| 9 | PWG-36-II | CLEAN, LUBRICATE AND ADJUST MOTOR | .04810 | JOB | |
| 10 | PWMU-1-8011 | REMOVE AND INSTALL BELT | .07320 | JOB | |
| 11 | PWMU-1-8028 | CLEAN WATER PUMP | .06440 | JOB | |
| 12 | PWG-40-I | LUBRICATE WATER PUMP | .01210 | JOB | |
| 13 | PWMU-1-8013 | REMOVE AND INSTALL FLOAT | .04620 | JOB | |
| 14 | PWMU-1-8026 | CLEAN FLOAT | .01640 | JOB | |
| 15 | S601 | ADJUST FLOAT | .04000 | JOB | |
| 16 | PWV-2-IV | PREPARE TO CRAIN OR FILL TOWER | .08732 | JOB | |

VT-54 • 2.11524 HRS PER JOB

VT-55 CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (25-99 TON).
--INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) PAN, COOLING AND HEATING COILS AND AIR PLENUM; INSPECT PAN AND MOTOR; ADJUST PAN MOTOR PULLEYS AND LUBRICATE PAN BEARINGS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|------------------|------------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .42720 | JOB | |
| 2 | PWMU-1-8013 | REMOVE AND INSTALL PANEL | .13860 | JOB | |
| 3 | PWG-40-II | SENSORY INSPECT SQUIRREL CAGE PAN AND MOTOR | .08420 | JOB | |
| 4 | PWG-40-III | CLEAN SQUIRREL CAGE PAN | .77524 | JOB | |
| 5 | PWMU-1-8031 | CLEAN COOLING AND HEATING COILS | 2.46600 | JOB | |
| 6 | PWV-2-I | CLEAN AIR PLENUM (AVG. 180 SQ. FT.) | .18600 .10800 | JOB JOB | |
| 7 | PWG-40-I | GREASE PAN BEARINGS | .03025 | JOB | |
| 8 | S607 | ADJUST PAN MOTOR PULLEYS | .10200 | JOB | |

VT-55 • 4.31831 HRS PER JOB

| VT-56 | | CLEAN, INSPECT, ADJUST AND LUBRICATE EVAPORATIVE CONDENSER OR METAL COOLING TOWER (3-9 TON). --INCLUDES REMOVE AND INSTALL PANELS; DRAIN AND FILL CONDENSER; CLEAN INSIDE CABINET AND COMPONENT WITH WATER HOSE, BRUSH AND/OR CLOTH; INSPECT MOTOR; ADJUST MOTOR AND FLOAT; LUBRICATE FAN AND MOTOR BEARINGS. | | |
|---------|-------------|--|------------------|------------|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS V3 |
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .21362 | JOB |
| 2 | PWMU-1-8011 | REMOVE AND INSTALL PANEL | .14640 | JOB |
| 3 | PWV-2-I | CLEAN INSIDE CABINET WITH HOSE (AVG. 48 SQ. FT.) | .18480 .02880 | JOB JOB |
| 4 | PWV-2-II | CLEAN INSIDE CABINET BY SCRAPING, BRUSHING AND WIPING. (AVG. 20 SQ. FT.) | .02184 .20560 | JOB JOB |
| 5 | PWG-40-IV | CLEAN BLOWER FAN | .04911 | JOB |
| 6 | PdG-40-I | LUBRICATE FAN | .01210 | JOB |
| 7 | PWG-34-II | CLEAN, LUBRICATE, INSPECT AND ADJUST MOTOR | .04810 | JOB |
| 8 | PWMU-1-8011 | REMOVE AND INSTALL BELT | .03660 | JOB |
| 9 | PWMU-1-8028 | CLEAN WATER PUMP | .08440 | JOB |
| 10 | PWG-40-I | LUBRICATE WATER PUMP | .01210 | JOB |
| 11 | PWMU-1-8013 | REMOVE AND INSTALL SPRAY NOZZLE | .40200 | JOB |
| 12 | PWMU-1-8026 | CLEAN SPRAY NOZZLE | .16400 | JOB |
| 13 | PWMU-1-8013 | REMOVE AND INSTALL FLOAT | .04620 | JOB |
| 14 | PWMU-1-8026 | CLEAN FLOAT | .01640 | JOB |
| 15 | S601 | ADJUST FLOAT | .04000 | JOB |
| 16 | PWG-20-II | DRAIN AND FILL CONDENSER | .22800 | JOB |
| VT-56 = | | .00204 HRS PER JOB | | |

| VT-57 | | CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (100-250 TON). --INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) FAN AND MOTOR, COOLING COILS AND AIR PLENUM; INSPECT FAN AND MOTOR; ADJUST FAN MOTOR PULLEY; LUBRICATE FAN BEARINGS. | | |
|---------|-------------|---|------------------|------------|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS V3I |
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .56968 | JOB |
| 2 | PWMU-1-8013 | REMOVE AND INSTALL PANEL | .18480 | JOB |
| 3 | PWG-40-XI | SENSORY INSPECT SQUIRREL CAGE FAN AND MOTOR | .08620 | JOB |
| 4 | PWG-40-XXV | CLEAN SQUIRREL CAGE FAN | 1.83756 | JOB |
| 5 | PWMU-1-8031 | CLEAN COOLING COILS | 3.56200 | JOB |
| 6 | PWV-2-I | CLEAN AIR PLENUM (AVG. OF 520 SQ. FT.) | .18680 .31200 | JOB JOB |
| 7 | PWG-40-I | GREASE FAN BEARINGS | .03825 | JOB |
| 8 | S607 | ADJUST FAN MOTOR PULLEY | .10280 | JOB |
| VT-57 = | | 6.86921 HRS PER JOB | | |

VT-58 CLEAN, INSPECT, ADJUST AND LUBRICATE AIR HANDLING UNIT (100-250 TON).
 --INCLUDES REMOVE AND INSTALL PANELS; CLEAN CENTRIFUGAL (SQUIRREL CAGE) FAN, COOLING AND HEATING COILS AND AIR PLENUM; INSPECT FAN AND MOTOR; ADJUST FAN MOTOR PULLEY; LUBRICATE FAN BEARINGS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|---|------------------|------------|-----|
| 00 | ***** | ***** | ***** | ***** | |
| 1 | PWU-1-8000 | REMOVE AND INSTALL SCREWS | .36960 | JOB | |
| 2 | PWU-1-8013 | REMOVE AND INSTALL PANEL | .19480 | JOB | |
| 3 | PWC-40-II | SENSORY INSPECT SQUIRREL CAGE FAN AND MOTOR | .08420 | JOB | |
| 4 | PWC-40-REV | CLEAN SQUIRREL CAGE FAN | 1.83736 | JOB | |
| 5 | PWU-1-8031 | CLEAN COOLING AND HEATING COILS | 7.12490 | JOB | |
| 6 | PWV-2-I | CLEAN AIR PLENUM (AVG. OF 525 SQ. FT.) | .18680 .31200 | JOB JOB | |
| 7 | PWC-40-I | GREASE FAN BEARINGS | .03020 | JOB | |
| 8 | SC07 | ADJUST FAN MOTOR PULLEY | .10200 | JOB | |

VT-58 = 10.43121 HRS PER JOB

VT-59 CLEAN, INSPECT, ADJUST AND LUBRICATE WOOD COOLING TOWER (300-999 TON).
 --INCLUDES REMOVE AND INSTALL PANELS; CLEAN INSIDE CP TOWER, FAN, MOTOR, WATER PUMP AND FLOAT WITH WATER HOSE, BRUSH AND/OR CLOTH; INSPECT; ADJUST MOTOR AND FLOAT; LUBRICATE FAN, MOTOR, WATER PUMP; ADD OIL TO GEAR BOX.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|---|-------------------|------------|-----|
| 00 | ***** | ***** | ***** | ***** | |
| 1 | PWU-1-8000 | REMOVE AND INSTALL SCREW | .14240 | JOB | |
| 2 | PWU-1-8011 | REMOVE AND INSTALL PANEL | .14640 | JOB | |
| 3 | PWU-1-8012 | REMOVE AND INSTALL SLAT | .28480 | JOB | |
| 4 | PWU-1-8006 | TIGHTEN PLANGE NUT | .09360 | JOB | |
| 5 | PWV-2-I | CLEAN INSIDE CP TOWER WITH WATER HOSE | .18480 1.00800 | JOB JOB | |
| 6 | PWV-2-II | CLEAN INSIDE CP TOWER BY SCRAPING, BRUSHING AND HIPING | .02104 7.71000 | JOB JOB | |
| 7 | PWC-40-IV | CLEAN FAN | .14733 | JOB | |
| 8 | PWC-40-I | LUBRICATE FAN | .01813 | JOB | |
| 9 | PWC-34-II | CLEAN, LUBRICATE, AND ADJUST MOTOR | .14430 | JOB | |
| 10 | PWU-1-8011 | REMOVE AND INSTALL BELT | .07320 | JOB | |
| 11 | PWU-1-8028 | CLEAN WATER PUMP | .08440 | JOB | |
| 12 | PWC-40-I | LUBRICATE WATER PUMP | .01210 | JOB | |
| 13 | PWU-1-8013 | REMOVE AND INSTALL FLOAT | .04620 | JOB | |
| 14 | PWU-1-8026 | CLEAN FLOAT | .01640 | JOB | |
| 15 | SC01 | ADJUST FLOAT | .04000 | JOB | |
| 16 | PWV-2-IV | PREPARE TO DRAIN OR FILL TOWER | .17464 | JOB | |
| 17 | PWU-1-8000 | REMOVE AND INSTALL GEAR BOX PLUG | .09343 | JOB | |
| 18 | PWC-40-VI | ADD OIL TO GEAR BOX | .02142 | JOB | |

VT-59 = 10.38938 HRS PER JOB

VT-60 RECURRING MAINTENANCE--INSPECT, ADJUST AND
LUBRICATE AIR HANDLING UNIT (25-250 TON SYSTEM)--
INCLUDES REMOVE AND INSTALL PANEL; INSPECT PAN AND
MOTOR; ADJUST BELT TENSION; LUBRICATE BEARINGS;
REPLACE FILTER; AND FILL OUT INSPECTION REPORT.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--------------------------------------|--------|-------|-----|
| 1 | PMU-1-0000 | REMOVE AND INSTALL SCREW | .56460 | JOB | |
| 2 | PMU-1-0012 | REMOVE AND INSTALL PANEL | .07120 | JOB | |
| 3 | PMG-40-II | SENSORY INSPECT PAN AND MOTOR | .08420 | JOB | |
| 4 | PMG-40-I | GREASE BEARINGS | .03025 | JOB | |
| 5 | 5607 | ADJUST BELT TENSION | .10200 | JOB | |
| 6 | PMU-1-0010 | REMOVE AND INSTALL DISPOSABLE FILTER | .15720 | JOB | |
| 7 | PMG-40-III | FILL OUT INSPECTION REPORT | .91375 | JOB | |

VT-60 = 1.02020 HRS PER JOB

VT-61 CLEAN, LUBRICATE, ADJUST AND INSPECT EVAPORATIVE
CONDENSER OR METAL COOLING TOWER (25-49 TON SYS.)
-INCLUDES DRAINING AND FILLING.-- DOES NOT INCLUDE
ACID CLEANING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|---------|-------|-----|
| 1 | PMU-1-0000 | REMOVE AND INSTALL SCREW | .21360 | JOB | |
| 2 | PMU-1-0011 | REMOVE AND INSTALL PANEL | .21960 | JOB | |
| 3 | PMV-2-I | CLEAN INSIDE CABINET WITH WATER HOSE | .10680 | JOB | |
| | | | .04080 | JOB | |
| 4 | PMV-2-II | CLEAN INSIDE OF CABINET BY SCRAPING, BRUSHING AND WIPING | .02184 | JOB | |
| | | | .26720 | JOB | |
| 5 | PMG-40-TRIV | CLEAN BLOWER PAN | .77526 | JOB | |
| 6 | PMG-40-I | LUBRICATE BLOWER PAN | .02420 | JOB | |
| 7 | PMG-34-II | CLEAN, LUBRICATE, INSPECT AND ADJUST MOTOR | .09620 | JOB | |
| 8 | PMU-1-0011 | REMOVE AND INSTALL BELT | .07320 | JOB | |
| 9 | PMU-1-0029 | CLEAN WATER PUMP | .08440 | JOB | |
| 10 | PMG-40-I | LUBRICATE WATER PUMP | .01210 | JOB | |
| 11 | PMU-1-0013 | REMOVE AND INSTALL NOZZLES | 1.38600 | JOB | |
| 12 | PMU-1-0026 | CLEAN NOZZLES | .49280 | JOB | |
| 13 | PMU-1-0013 | REMOVE AND INSTALL FLOAT | .04620 | JOB | |
| 14 | PMU-1-0026 | CLEAN FLOAT | .01640 | JOB | |
| 15 | 5601 | ADJUST FLOAT | .04000 | JOB | |
| 16 | PMU-1-0011 | REMOVE AND INSTALL RAFFLE | .21960 | JOB | |
| 17 | PMG-20-II | DRAIN AND FILL CONDENSER | .68400 | JOB | |

VT-61 = 4.89947 HRS PER JOB

VT-62 CLEAN, LUBRICATE, ADJUST AND INSPECT AIR-COOLED
CONDENSER (3-24 TON AIR CONDITIONING SYSTEM)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----------------------------|------------|---|------------------|------------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .17800 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PANEL | .14640 | JOB | |
| 3 | PMV-2-I | CLEAN INSIDE CABINET WITH WATER HOSE | .18640 .91800 | JOB JOB | |
| 4 | PMV-2-II | CLEAN INSIDE CP CABINET BY SCRAPING, BRUSHING AND WIPING | .02184 .20960 | JOB JOB | |
| 5 | PMG-40-IV | CLEAN PAN | .04911 | JOB | |
| 6 | PMG-40-I | LUBRICATE PAN | .01210 | JOB | |
| 7 | PMG-34-II | CLEAN, LUBRICATE AND ADJUST MOTOR | .04810 | JOB | |
| 8 | PMU-1-8011 | REMOVE AND INSTALL BELT | .07320 | JOB | |
| VT-62 • .93919 HRS PER JOB | | | | | |

VT-63 CLEAN, LUBRICATE, ADJUST AND INSPECT EVAPORATIVE
CONDENSER OR METAL COOLING TOWER (100-199 SYSTEM)
-INCLUDES DRAINING AND FILLING.-- DOES NOT INCLUDE
ACID CLEAN.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|-----------------------------|-------------|--|------------------|------------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW | .32640 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PANEL | .29280 | JOB | |
| 3 | PMV-2-I | CLEAN INSIDE CABINET WITH WATER HOSE | .18680 .12000 | JOB JOB | |
| 4 | PMV-2-II | CLEAN INSIDE CABINET BY SCRAPING, BRUSHING AND WIPING | .02184 .03736 | JOB JOB | |
| 5 | PMG-40-IXIV | CLEAN BLOWER PAN | 1.93815 | JOB | |
| 6 | PMG-40-I | LUBRICATE PAN | .06050 | JOB | |
| 7 | PMG-34-II | CLEAN, LUBRICATE AND ADJUST MOTOR | .04810 | JOB | |
| 8 | PMU-1-8011 | REMOVE AND INSTALL BELT | .14640 | JOB | |
| 9 | PMU-1-8020 | CLEAN WATER PUMP | .08640 | JOB | |
| 10 | PMG-40-I | LUBRICATE WATER PUMP | .01210 | JOB | |
| 11 | PMU-1-8013 | REMOVE AND INSTALL NOZZLE | 2.31000 | JOB | |
| 12 | PMU-1-8026 | CLEAN NOZZLE | .02000 | JOB | |
| 13 | PMU-1-8013 | REMOVE AND INSTALL FLOAT | .04620 | JOB | |
| 14 | PMU-1-8026 | CLEAN FLOAT | .01640 | JOB | |
| 15 | 5001 | ADJUST FLOAT | .04000 | JOB | |
| 16 | PMU-1-8011 | REMOVE AND INSTALL BAFPLE | .36600 | JOB | |
| 17 | PMQ-20-II | FILL AND DRAIN CONDENSER | 1.32000 | JOB | |
| VT-63 • 8.98744 HRS PER JOB | | | | | |

VT-64 CLEAN, LUBRICATE, ADJUST AND INSPECT AIR-COOLED
CONDENSER (25-49 TON AIR CONDITIONING SYSTEM)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|--|-------------------|------------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .24920 | JOB | |
| 2 | PWMU-1-8011 | REMOVE AND INSTALL PANEL | .14640 | JOB | |
| 3 | PWV-1-I | CLEAN INSIDE OF CABINET WITH WATER | .18680 .06000 | JOB JOB | |
| 4 | PWV-2-II | CLEAN INSIDE CABINET BY SCRAPING, BRUSHING AND WIPING | .02184 1.02800 | JOB JOB | |
| 5 | PWG-40-IV | CLEAN PAN | .04911 | JOB | |
| 6 | PWG-40-I | LUBRICATE PAN | .01210 | JOB | |
| 7 | PWG-34-II | CLEAN, LUBRICATE AND ADJUST MOTOR | .04810 | JOB | |
| 8 | PWMU-1-8011 | REMOVE AND INSTALL BELT | .07320 | JOB | |
| 9 | PWA-9-II | MATERIAL HANDLING | .41430 | JOB | |

VT-64 * 2.28911 HRS PER JOB

VT-65 REMOVE AND INSTALL 100-DISPOSABLE TYPE FILTERS
FROM OVERHEAD PLENUMS.--AVG. 10-PLENUMS PER 100
FILTERS. LADDER USE INCLUDED.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|--|---------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL WING NUT OR SCREW | 1.06900 | JOB | |
| 2 | PWMU-1-8022 | REMOVE AND INSTALL PANEL | 2.09600 | JOB | |
| 3 | PWMU-1-8010 | REMOVE AND INSTALL 100 DISPOSABLE FILTERS AVG. 10 PLENUMS PER 100 FILTERS | 2.62000 | JOB | |
| 4 | PWA-9-II | MATERIAL HANDLING | .20710 | JOB | |
| 5 | PWMU-1-8052 | GET, ASCEND, DESCEND, AND ASIDE LADDER | .20700 | JOB | |

VT-65 * 6.15810 HRS PER JOB

VT-66

PUNCH TUBES IN SHELL AND TUBE WATER-COOLED CONDENSER OR CHILLED WATER EVAPORATOR (700-800 TON SYS.) --INCLUDES DRAIN AND FILL, REMOVE AND INSTALL END PLATES, AND FABRICATE AND INSTALL GASKETS. USE LADDER OR SCAFFOLDING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|------------------------------|-------------|--|-------------------|------------|-----|
| 1 | PMQ-19-VIII | REMOVE AND INSTALL PIPE FITTING | .54868 | JOB | |
| 2 | PMQ-20-II | GRAIN AND FILL TUBES | 1.82000 | JOB | |
| 3 | PMU-1-8952 | REMOVE AND INSTALL LARGE NUT | 1.52600 | JOB | |
| 4 | PMU-10-XIII | REMOVE AND INSTALL END PLATES | 1.13560 | JOB | |
| 5 | PMV-13-II | PUNCH CLEAN TUBE UP TO 12 FEET LONG | .02400 6.42200 | JOB JOB | |
| 6 | PMV-13-II | GRY TUBE WITH RAG | .02400 6.42200 | JOB JOB | |
| 7 | PMU-19-II | CUT 2 GASKETS | .01964 .10908 | JOB JOB | |
| 8 | PMU-19-K5 | PUNCH 32 HOLES IN GASKET | .00201 .23648 | JOB JOB | |
| 9 | PMU-1-8022 | INSTALL GASKET | .20560 | JOB | |
| 10 | PMA-5-II | MATERIAL HANDLING | .41436 | JOB | |
| 11 | PMU-1-8052 | GET, ASCEND, DESCEND, AND ASIDE LADDER | .04140 | JOB | |
| VT-66 = 14.72301 HRS PER JOB | | | | | |

VT-67

REMOVE AND INSTALL VALVE PLATES ON COMPRESSOR IN OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|-----------------------------|-------------|---|------------------|------------|-----|
| 1 | VT-2 | RUN COMPRESSOR TO PUMPDOWN | .38220 | JOB | |
| 2 | PMU-1-8952 | REMOVE AND INSTALL COMPRESSOR HEAD BOLTS | .52320 | JOB | |
| 3 | 9519 | REMOVE HEAD PLATE COVER | .65622 | JOB | |
| 4 | PMU-1-8000 | REMOVE AND INSTALL VALVE PLATE BOLTS | .28480 | JOB | |
| 5 | 9519 | REMOVE VALVE PLATE | .05622 | JOB | |
| 6 | 8928 | REMOVE AND INSTALL GASKET ON VALVE PLATE OR HEAD COVER | .09200 | JOB | |
| 7 | 2983 | INSTALL VALVE PLATE OR HEAD COVER | .00832 | JOB | |
| 8 | PMV-1-XVIII | PULL VACUUM ON SYSTEM | 1.32348 | JOB | |
| 9 | VT-1 | CHARGE OPEN (CENTRAL COMPRESSION) AIR CONDITIONING SYSTEM | .62149 .37890 | JOB JOB | |
| 10 | PMV-1-II | PUT SYSTEM INTO OPERATION | .95211 | JOB | |
| VT-67 = 4.63889 HRS PER JOB | | | | | |

VT-68 REMOVE AND INSTALL DOOR GASKET ON DOMESTIC REPRIG-
ERATOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|----------------------------------|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS | .78320 | JOB | |
| 2 | PWMU-1-8021 | REMOVE AND INSTALL DOOR PANEL | .04900 | JOB | |
| 3 | PWMU-1-8011 | REMOVE AND INSTALL GASKET | .07320 | JOB | |
| 4 | 9601 | ADJUST PANEL AND GASKET TO MOLES | .16000 | JOB | |
| 5 | 9604 | ALIGN AND ADJUST DOOR | .07100 | JOB | |
| 6 | 4208 | CHECK DOOR FOR FIT | .04200 | JOB | |
| 7 | PWMU-1-8027 | CLEAN DOOR | .03590 | JOB | |

VT-68 = 1.21430 HRS PER JOB

VT-69 REMOVE AND INSTALL BELT ON WATER COOLER.--INCLUDES
REMOVE AND INSTALL ACCESS PANEL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|-------------------------------|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .03560 | JOB | |
| 2 | PWMU-1-8010 | REMOVE AND INSTALL PANEL | .02620 | JOB | |
| 3 | PWMU-1-8006 | LOOSEN AND TIGHTEN BASE BOLTS | .05360 | JOB | |
| 4 | PWMU-1-8010 | REMOVE AND INSTALL BELT | .05240 | JOB | |
| 5 | 9600 | ADJUST TENSION ON BELT | .05200 | JOB | |
| 6 | PWMU-1-8005 | PLUG AND UNPLUG UNIT | .00400 | JOB | |
| 7 | 4206 | CHECK OPERATION | .00800 | JOB | |

VT-69 = .23180 HRS PER JOB

VT-70

SECURE SYSTEM; DRAIN AND FILL CRANKCASE; DISASSEMBLE AND ASSEMBLE; CLEAN; INSPECT; AND EVACUATE COMPRESSOR (10-25 TON AIR CONDITIONING SYSTEM) --DOES NOT INCLUDE PUMP DOWN, REMOVAL AND/OR INSTALLATION OF COMPRESSOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|------------------|------------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PMJ-14-1V | OPEN AND CLOSE VALVES | .03384 | JOB | |
| 2 | PMU-1-8552 | REMOVE AND INSTALL VALVE BOLTS | .17450 | JOB | |
| 3 | PMU-1-8021 | REMOVE AND INSTALL SERVICE VALVE AND GASKETS | .19600 | JOB | |
| 4 | PMU-1-8552 | REMOVE AND INSTALL DRAIN PLUG | .02180 | JOB | |
| 5 | PMU-1-VCI | DRAIN AND FILL CRANK CASE | .07887 .02496 | JOB JOB | |
| 6 | PMU-1-8552 | REMOVE AND INSTALL HEAD BOLTS | .43600 | JOB | |
| 7 | PMU-1-9011 | REMOVE AND INSTALL PLATE AND GASKET | .14640 | JOB | |
| 8 | PMU-1-8000 | REMOVE AND INSTALL VALVE PLATE SCREW | .03560 | JOB | |
| 9 | PMU-1-8021 | REMOVE AND INSTALL VALVE PLATE AND GASKET | .09600 | JOB | |
| 10 | PMU-1-8552 | REMOVE AND INSTALL CASE PLATE BOLTS | .26160 | JOB | |
| 11 | PMU-1-9011 | REMOVE AND INSTALL CASE PLATE AND GASKET | .14640 | JOB | |
| 12 | PMU-1-8552 | REMOVE AND INSTALL SEAL PLATE BOLTS | .13080 | JOB | |
| 13 | PMU-1-8011 | REMOVE AND INSTALL FLYWHEEL SHAFT KEY | .07320 | JOB | |
| 14 | PMU-1-8021 | REMOVE AND INSTALL SEAL PLATE, BELLOW AND GASKET | .14700 | JOB | |
| 15 | PMU-1-8013 | REMOVE AND INSTALL SHAFT COLLAR | .04620 | JOB | |
| 16 | PMU-1-8552 | REMOVE AND INSTALL THRUST NUT | .02180 | JOB | |
| 17 | PMU-1-8013 | REMOVE AND INSTALL THRUST BEARING AND WASHERS | .09240 | JOB | |
| 18 | PMU-1-8552 | REMOVE AND INSTALL CONNECTING ROD BOLTS | .08720 | JOB | |
| 19 | PMU-1-8010 | REMOVE AND INSTALL BEARING CAP AND SHIMS | .10480 | JOB | |
| 20 | PMU-1-8552 | REMOVE AND INSTALL SEAL BEARING BOLTS | .17440 | JOB | |
| 21 | PMU-1-8010 | REMOVE AND INSTALL SEAL BEARING, PLATE AND GASKET | .07860 | JOB | |
| 22 | PMU-1-8021 | REMOVE AND INSTALL CRANKSHAFT | .04300 | JOB | |
| 23 | PMU-1-8021 | REMOVE AND INSTALL PISTON AND ROD ASSEMBLY | .09800 | JOB | |
| 24 | PMU-1-8021 | REMOVE AND INSTALL PISTON RINGS | .29400 | JOB | |
| 25 | PMU-1-8021 | REMOVE AND INSTALL WRIST PIN | .09800 | JOB | |
| 26 | PMU-1-8027 | CLEAN PARTS | .71800 | JOB | |
| 27 | 4201 | INSPECT PARTS | .33600 | JOB | |
| 28 | VT-2 | CONNECT, OPERATE AND DISCONNECT VACUUM PUMP | .76440 | JOB | |
| 29 | PMU-1-II | MATERIAL HANDLING | .20718 | JOB | |

VT-70 • 5.17824 HRS PER JOB

VT-71

SECURE SYSTEM; DRAIN AND FILL CRANKCASE; DISASSEMBLE AND ASSEMBLE; CLEAN; INSPECT; AND EVACUATE COMPRESSOR (30-100 TON AIR CONDITIONING SYSTEM) --DOES NOT INCLUDE PUMP DOWN, REMOVAL AND/OR INSTALLATION OF COMPRESSOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|-------|------------|---|------------------|------------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PMU-14-IV | OPEN AND CLOSE SERVICE VALVES | .03384 | JOB | |
| 2 | PMU-1-8552 | REMOVE AND INSTALL SERVICE VALVE BOLTS | .17440 | JOB | |
| 3 | PMU-1-8021 | REMOVE AND INSTALL VALVE AND GASKET | .19600 | JOB | |
| 4 | PMU-1-8552 | REMOVE AND INSTALL DRAIN PLUG | .02180 | JOB | |
| 5 | PMU-3-VII | DRAIN AND REFILL CRANKCASE | .37887 .02895 | JOB JOB | |
| 6 | PMU-1-8552 | REMOVE AND INSTALL HEAD BOLTS | 1.30800 | JOB | |
| 7 | PMU-1-8011 | REMOVE AND INSTALL HEAD AND GASKET | .43320 | JOB | |
| 8 | PMU-1-8000 | REMOVE AND INSTALL VALVE PLATE SCREW | .10680 | JOB | |
| 9 | PMU-1-8021 | REMOVE AND INSTALL VALVE PLATE AND GASKET | .23400 | JOB | |
| 10 | PMU-1-8552 | REMOVE AND INSTALL BASE PLATE BOLTS | .91560 | JOB | |
| 11 | PMU-1-8011 | REMOVE AND INSTALL BASE PLATE AND GASKET | .14640 | JOB | |
| 12 | PMU-1-8552 | REMOVE AND INSTALL SEAL PLATE BOLT | .17440 | JOB | |
| 13 | PMU-1-8011 | REMOVE AND INSTALL PLYWHEEL SHAFT KEY | .37320 | JOB | |
| 14 | PMU-1-8021 | REMOVE AND INSTALL SEAL PLATE, BELLINGS, AND GASKET | .14700 | JOB | |
| 15 | PMU-1-8013 | REMOVE AND INSTALL SHAFT COLLAR | .74620 | JOB | |
| 16 | PMU-1-8552 | REMOVE AND INSTALL THRUST NUT | .02190 | JOB | |
| 17 | PMU-1-8013 | REMOVE AND INSTALL THRUST BEARING AND WASHER | .09240 | JOB | |
| 18 | PMU-1-8552 | REMOVE AND INSTALL CONNECTING ROD BOLTS | .26160 | JOB | |
| 19 | PMU-1-8010 | REMOVE AND INSTALL BEARING CAP AND SHIM | .31440 | JOB | |
| 20 | PMU-1-8552 | REMOVE AND INSTALL SEAL BEARING BOLTS | .26160 | JOB | |
| 21 | PMU-1-8010 | REMOVE AND INSTALL SEAL BEARING, PLATE AND GASKET | .37860 | JOB | |
| 22 | PMU-1-8021 | REMOVE AND INSTALL CRANKSHAFT | .04900 | JOB | |
| 23 | PMU-1-8021 | REMOVE AND INSTALL PISTON AND ROD ASSEMBLY | .29400 | JOB | |
| 24 | PMU-1-8013 | REMOVE AND INSTALL PISTON RINGS | .83160 | JOB | |
| 25 | PMU-1-8013 | REMOVE AND INSTALL WRIST PIN | .27720 | JOB | |
| 26 | PMU-1-8027 | CLEAN PARTS | 1.00520 | JOB | |
| 27 | 4201 | INSPECT PARTS | .57600 | JOB | |
| 28 | VT-2 | CONNECT, OPERATE AND DISCONNECT VACUUM PUMP | .76440 | JOB | |
| 29 | PMU-3-II | MATERIAL HANDLING | .31877 | JOB | |
| VT-71 | • | 9.32323 HRS PER JOB | | | |

VT-72

REPLACE SEALS AND BEARINGS IN WATER PUMP WITH
3-HP MOTOR.
--INCLUDES SECURE SYSTEM; REMOVE AND INSTALL PUMP;
DISASSEMBLE AND ASSEMBLE; ACTIVATE SYSTEM.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|-----------------------------|------------|---------------------------------------|--------|-------|-----|
| 1 | PWU-1-8005 | TURN POWER OFF AND ON | .00400 | JOB | |
| 2 | PNQ-14-IV | CLOSE AND OPEN VALVES | .03384 | JOB | |
| 3 | PWU-1-8552 | REMOVE AND INSTALL DRAIN PLUG | .02180 | JOB | |
| 4 | PWU-1-8012 | SECURE WATER LINES IN POSITION | .03560 | JOB | |
| 5 | PWU-1-8552 | REMOVE AND INSTALL STRAINER SECTION | .17440 | JOB | |
| 6 | PWU-1-8552 | REMOVE AND INSTALL SHOCK ABSORBER | .17440 | JOB | |
| 7 | PWU-1-8000 | REMOVE AND INSTALL BOLTS IN HOUSING | .17800 | JOB | |
| 8 | PWU-1-8011 | REMOVE AND INSTALL HOUSING AND GASKET | .14440 | JOB | |
| 9 | PWU-1-8552 | REMOVE AND INSTALL MOUNTING BOLTS | .08720 | JOB | |
| 10 | PWU-1-8004 | LOOSEN AND TIGHTEN COUPLING SCREWS | .02480 | JOB | |
| 11 | PWU-1-8013 | REMOVE AND INSTALL COUPLING | .04420 | JOB | |
| 12 | PWU-1-8552 | REMOVE AND INSTALL IMPELLER NUT | .02180 | JOB | |
| 13 | PWU-1-8021 | REMOVE AND INSTALL IMPELLER | .04900 | JOB | |
| 14 | PWU-1-8013 | REMOVE AND INSTALL SEALS | .09240 | JOB | |
| 15 | PWU-1-8552 | REMOVE AND INSTALL BEARING BOLTS | .13080 | JOB | |
| 16 | PWU-1-8011 | REMOVE AND INSTALL SHAFT BEARINGS | .14440 | JOB | |
| 17 | PWA-3-II | MATERIAL HANDLING | .20710 | JOB | |
| VT-72 = 1.57622 HRS PER JOB | | | | | |

VT-73

REMOVE AND INSTALL CENTRIFUGAL (SQUIRREL CAGE)
PAN AND MOTOR

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|-----------------------------|------------|---|---------|-------|-----|
| 1 | PWV-3-I | REMOVE AND INSTALL CENTRIFUGAL (SQUIRREL CAGE) PAN | .23983 | JOB | |
| 2 | PWV-3-II | REMOVE AND INSTALL DOUBLE CENTRIFUGAL (SQUIRREL CAGE) PANS | .42367 | JOB | |
| 3 | PWV-3-III | REMOVE AND INSTALL CENTRIFUGAL PAN MOTOR | 1.05927 | JOB | |
| 4 | PWU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .01700 | JOB | |
| 5 | PWA-3-II | MATERIAL HANDLING | .10359 | JOB | |
| VT-73 = 1.84336 HRS PER JOB | | | | | |

VT-74 REMOVE AND INSTALL AIR COOLING UNIT PROPELLER TYPE
FAN AND MOTOR

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|---|---------|-------|-----|
| 1 | PMV-3-IV | REMOVE AND INSTALL FAN MOTOR | 1.29409 | JOB | |
| 2 | PMV-3-V | REMOVE AND INSTALL FAN | .51312 | JOB | |
| 3 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .01700 | JOB | |
| 4 | PWA-5-II | MATERIAL HANDLING | .10359 | JOB | |

VT-74 = 1.92780 HRS PER JOB

VT-75 REMOVE AND INSTALL FAN AND MOTOR IN WATER TOWER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|---|---------|-------|-----|
| 1 | PMV-3-VI | REMOVE AND INSTALL FAN MOTOR | 2.34273 | JOB | |
| 2 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .08500 | JOB | |
| 3 | PWA-5-II | MATERIAL HANDLING | .10359 | JOB | |

VT-75 = 2.53132 HRS PER JOB

VT-76 REMOVE WINDOW AIR CONDITIONER (UP TO 1/2 TON)
FROM RAISABLE WINDOW

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|--|--------|-------|-----|
| 1 | 2235 | UNPLUG UNIT | .00099 | JOB | |
| 2 | 2648 | TIE UP ELECTRICAL CORD | .00185 | JOB | |
| 3 | PMU-1-8005 | RAISE AND LOWER WINDOW | .00400 | JOB | |
| 4 | PMU-1-8010 | REMOVE WEATHERSTRIPPING | .01310 | JOB | |
| 5 | PMU-1-8010 | REMOVE FILLER PANEL | .02620 | JOB | |
| 6 | PMU-1-8553 | LOOSEN LEVELING SCREW | .01740 | JOB | |
| 7 | PMU-1-8021 | REMOVE UNIT FROM WINDOW | .02450 | JOB | |
| 8 | PWA-5-II | MATERIAL HANDLING | .20718 | JOB | |
| 9 | PMU-1-8052 | GET, ASCEND, DESCEND, AND ASIDE LADDER | .02070 | JOB | |
| 10 | PMG-40-KII | FILL OUT RECORD SHEET | .01185 | JOB | |

VT-76 = .32777 HRS PER JOB

VT-77 INSTALL WINDOW AIR CONDITIONER (UP TO 1/2 TON)
 IN RAISABLE WINDOW

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|-----------------------------------|--------|-------|-----|
| 1 | PWMU-1-8005 | RAISE AND LOWER WINDOW | .00400 | JOB | |
| 2 | PWMU-1-8021 | REMOVE UNIT FROM CARTON | .02450 | JOB | |
| 3 | PWMU-1-8021 | POSITION UNIT IN WINDOW | .02450 | JOB | |
| 4 | PWMU-1-8552 | INSTALL LEVELING ARM | .08720 | JOB | |
| 5 | PWMU-1-8553 | ADJUST AND TIGHTEN LEVELING SCREW | .01740 | JOB | |
| 6 | PWMU-1-8010 | INSTALL FILLER PANEL | .02620 | JOB | |
| 7 | PWMU-1-8010 | INSTALL WEATHERSTRIPPING | .01310 | JOB | |
| 8 | 2234 | PLUG IN UNIT | .00125 | JOB | |
| 9 | 4211 | CHECK OPERATION | .29200 | JOB | |
| 10 | PWA-5-II | MATERIAL HANDLING | .20710 | JOB | |

VT-77 = .69733 HRS PER JOB

VT-200 ASSIST BOILER INSPECTOR IN EXTERNAL INSPECTION OF
 FIRE TUBE BOILER, 3,348 TO 6,696 LB./HR. (100 TO
 200 MP)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-------------------------------------|--------|-------|-----|
| 1 | PMV-14-I | EXTERNALLY INSPECT FIRE TUBE BOILER | .38283 | JOB | |

VT-200 = .38283 HRS PER JOB

VT-201 ASSIST BOILER INSPECTOR IN EXTERNAL INSPECTION OF
 WATER TUBE BOILER, 16,740 TO 33,480 LB./HR. (500
 TO 1000 MP)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|--------------------------------------|--------|-------|-----|
| 1 | PMV-14-II | EXTERNALLY INSPECT WATER TUBE BOILER | .46372 | JOB | |

VT-201 = .46372 HRS PER JOB

VT-202 ASSIST BOILER INSPECTOR IN INTERNAL INSPECTION OF
 FIRE TUBE BOILER, 3,348 TO 6,696 LB./HR. (100 TO
 200 MP)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|-------------------------------------|--------|-------|-----|
| 1 | PMV-14-III | INTERNALLY INSPECT FIRE TUBE BOILER | .67065 | JOB | |

VT-202 = .67065 HRS PER JOB

VT-203 ASSIST BOILER INSPECTOR IN INTERNAL INSPECTION OF
WATER TUBE BOILER, 16,740 TO 33,480 LB./HR. (500
TO 1000 HP)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|--------------------------------------|---------|-------|-----|
| 1 | PMV-14-IV | INTERNALLY INSPECT WATER TUBE BOILER | 1.42617 | JOB | |

VT-203 = 1.42617 HRS PER JOB

VT-204 ASSIST BOILER INSPECTOR IN OPERATIONAL TEST OF
FIRE TUBE BOILER, 3,348 TO 6,696 LB./HR. (100 TO
200 HP)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|------------------------------------|--------|-------|-----|
| 1 | PMV-14-VII | TEST OPERATION OF FIRE TUBE BOILER | .53314 | JOB | |

VT-204 = .53314 HRS PER JOB

VT-205 ASSIST BOILER INSPECTOR IN OPERATIONAL TEST OF
WATER TUBE BOILER, 16,740 TO 33,480 LB./HR. (500
TO 1000 HP)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|-------------------------------------|--------|-------|-----|
| 1 | PMV-14-VIII | TEST OPERATION OF WATER TUBE BOILER | .97561 | JOB | |

VT-205 = .97561 HRS PER JOB

VT-206 ASSIST BOILER INSPECTOR IN HYDROSTATIC INSPECTION
OF FIRE TUBE BOILER, 3,348 TO 6,696 LB./HR. (100
TO 200 HP)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|--------------------------------------|---------|-------|-----|
| 1 | PMV-14-V | HYDROSTATIC INSPECT FIRE TUBE BOILER | 1.48028 | JOB | |

VT-206 = 1.48028 HRS PER JOB

VT-207 ASSIST BOILER INSPECTOR IN HYDROSTATIC INSPECTION
OF WATER TUBE BOILER, 16,740 TO 33,480 LB./HR.
(500 TO 1000 HP)

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|---------------------------------------|---------|-------|-----|
| 1 | PMV-14-VI | HYDROSTATIC INSPECT WATER TUBE BOILER | 2.43572 | JOB | |

VT-207 = 2.43572 HRS PER JOB

NY-100 • 1-01348 W42 FEB 1960

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WT-210 • 2.52174 PLS PER JCS

VT-211 • 6.32561 MRS PER JOI

VT-217 REMOVE OR INSTALL SUPERHEATER DOOR ON WATER TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|------------------------------------|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PAN-10-11 | INSTALL OR REMOVE SUPERHEATER DOOR | .09414 | JOB | |

VT-217 * .09414 HRS PER JOB

VT-218 REMOVE OR INSTALL PRECIPITATOR DOOR ON WATER TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|---|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PAN-10-12 | REMOVE OR INSTALL DOOR BOLTS | .25536 | JOB | |
| 2 | PAN-10-13 | REMOVE OR INSTALL DOOR BOLTS | .25536 | JOB | |
| 3 | PAN-10-VIII | REMOVE OR INSTALL STEEL PLATE | .06863 | JOB | |
| 4 | PAN-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .00175 | JOB | |

VT-218 * .52110 HRS PER JOB

VT-219 REMOVE OR INSTALL ACCESS DOOR ON FIRE TUBE OR WATER TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|---------------------------|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PAN-11-11 | OPEN OR CLOSE ACCESS DOOR | .09180 | JOB | |

VT-219 * .09180 HRS PER JOB

VT-220 REMOVE OR INSTALL CLEAN OUT DOOR ON FIRE TUBE OR WATER TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|----------------------------------|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PAN-11-VIII | REMOVE OR INSTALL CLEAN OUT DOOR | .02538 | PLUG | |

VT-220 * .02538 HRS PER PLUG

VT-221 REMOVE OR INSTALL PREPHOLE DOOR ON FIRE TUBE OR WATER TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|---------------------------------|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PAN-11-VIII | REMOVE OR INSTALL PREPHOLE DOOR | .02538 | PLUG | |

VT-221 * .02538 HRS PER PLUG

VT-222 REMOVE OR INSTALL BOLTED INSPECTION PLATES ON PIPE
TUBE OR WATER TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|--|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PWN-11-IV | REMOVE OR INSTALL INSPECTION PLATES (BOLTED) | .09723 | COVER | |

VT-222 * .09723 HRS PER COVER

VT-223 REMOVE OR INSTALL STEEL SHEET STRIP ON PIPE TUBE
OR WATER TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-------------------------------------|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PWN-10-VI | REMOVE OR INSTALL STEEL SHEET STRIP | .01265 | JOB | |

VT-223 * .01265 HRS PER JOB

VT-224 REMOVE OR INSTALL FIREBRICK TOP INSULATION ON BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|--|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PWN-10-IX | REMOVE OR INSTALL FIREBRICK TOP INSULATION | .00165 | JOB | |

VT-224 * .00165 HRS PER JOB

VT-225 REMOVE OR INSTALL FIREBRICK TOP ON BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|---------------------------------|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PWN-10-X | REMOVE OR INSTALL FIREBRICK TOP | .03618 | JOB | |

VT-225 * .03618 HRS PER JOB

VT-226 REMOVE OR INSTALL FIREBRICK

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-----------------------------|--------|-------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PWN-10-VI | REMOVE OR INSTALL FIREBRICK | .01265 | JOB | |

VT-226 * .01265 HRS PER JOB

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|------------------------------|-------------|------------------------------|--------|-------|-----|
| 00 | ***** | ***** | ***** | ***** | |
| 1 | PMV-11-VIII | REMOVE OR INSTALL SMALL PLUG | .02530 | PLUG | |
| VT-227 = .02530 MRS PER PLUG | | | | | |

VT-227 - .02530 MRS PER PLUG

VT-218 REMOVE MANHOLE COVER ON FIRE TUBE OR WATER TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|-----------------------|--------|-------|-----|
| 1 | PMV-11-IV | REMOVE MANHOLE COVER | .09723 | COVER | |

VT-220 - 09723 HRS PER COVER

VT-229 REMOVE HANDHOLE COVER ON FIRE TUBE OR WATER TUBE
BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|-----------------------|--------|-------|-----|
| 00 | ***** | ***** | ***** | ***** | |
| 01 | PMV-11-VI | REMOVE HANDHOLE COVER | .03468 | COVER | |

VT-229 * .05460 HRS PER COVER

VT-230 INSTALL MANHOLE COVER ON FIRE TUBE OR WATER TUBE
 BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-----------------------|--------|-------|-----|
| 01 | PHV-11-V | INSTALL MANHOLE COVER | .20614 | COVER | |

VT-230 • .20614 MRS PER COVER

VT-231 INSTALL MANHOLE COVER ON FIRE TUBE OR WATER TUBE
BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|------------------------|--------|-------|-----|
| 1 | PMV-11-VII | INSTALL HANDHOLE COVER | .11490 | COVER | |

VT-231 = .11690 MMS PER COVER

| | | | | | |
|----------|-----------|-------------------------|--------|-------|-----|
| VT-232 | | PREPARE TO DRAIN BOILER | | | |
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
| 1 | PMV-2-IV | PREPARE TO DRAIN BOILER | .08732 | JOB | |
| VT-232 = | | .08732 HRS PER JOB | | | |

| | | | | | |
|----------|-----------|-----------------------------------|--------|-------|-----|
| VT-233 | | FILL BOILER AND INSPECT FOR LEAKS | | | |
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
| 1 | PMV-11-IX | FILL BOILER AND INSPECT FOR LEAKS | .63164 | JOB | |
| VT-233 = | | .63164 HRS PER JOB | | | |

| | | | | | |
|----------|------------|---|-------------------|------------|-----|
| VT-234 | | CLEAN FIRESIDE OF LIGHTLY SLAGGED WATER TUBE BOILER.--INCLUDES: REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (4'X 10'X 15'), TWO PASSES, AND 146 TUBES (BY SCRAPING).-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR. | | | |
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
| 1 | PMU-1-8557 | ENTER AND LEAVE MANHOLES 7 TIMES | .06500 | JOB | |
| 2 | PMS-2-III | REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM | .02800 | JOB | |
| 3 | PMS-2-IV | LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE | .42840 | JOB | |
| 4 | PMA-5-II | MATERIAL HANDLING | .93231 | JOB | |
| 5 | PMS-2-III | RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE | .37296 | JOB | |
| 6 | PMV-2-II | SCRAPE AND BRUSH 30% OF FIREBOX WALLS AND CEILING (470 SF TOTAL) (141 SF SCRAPPED) | .02184 1.44948 | JOB JOB | |
| 7 | PMV-2-II | SCRAPE CLEAN 330 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES | .02184 3.39240 | JOB JOB | |
| 8 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .01020 | JOB | |
| VT-234 = | | 7.52403 HRS PER JOB | | | |

VT-235

CLEAN FIRESIDE OF HEAVILY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (4'X 10'X 15'), TWO PASSES, AND 110 TUBES (BY SCRAPING).-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|---|-------------------|------------|-----|
| 1 | PWNU-1-8557 | ENTER AND LEAVE MANHOLES 8 TIMES | .07520 | JOB | |
| 2 | PWS-2-III | REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM | 1.65760 | JOB | |
| 3 | PWS-2-IV | LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE | 1.76120 | JOB | |
| 4 | PWA-3-II | MATERIAL HANDLING | 1.55385 | JOB | |
| 5 | PWS-2-III | RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE | .87024 | JOB | |
| 6 | PWV-2-II | SCRAPE AND BRUSH 70% OF FIREBOX WALLS AND CEILING (470 SF TOTAL) (329 SF SCRAPED) | .02184 3.38212 | JOB JOB | |
| 7 | PWV-2-II | SCRAPE CLEAN 50% OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES | .02184 5.23252 | JOB JOB | |
| 8 | PWNU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .01360 | JOB | |

VT-235 = 14.59001 HRS PER JOB

VT-236

CLEAN FIRESIDE OF LIGHTLY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (8'X 13'X 20'), TWO PASSES, AND 182 TUBES (BY SCRAPING).-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-------------|---|-------------------|------------|-----|
| 1 | PWNU-1-8557 | ENTER AND LEAVE MANHOLES 10 TIMES | .09400 | JOB | |
| 2 | PWS-2-III | REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM | 2.52784 | JOB | |
| 3 | PWS-2-IV | LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE | 2.42760 | JOB | |
| 4 | PWA-3-II | MATERIAL HANDLING | 2.79693 | JOB | |
| 5 | PWS-2-III | RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE | 1.57472 | JOB | |
| 6 | PWV-2-II | SCRAPE AND BRUSH 30% OF FIREBOX WALLS AND CEILING (780 SF TOTAL) (234 SF SCRAPED) | .02184 2.40552 | JOB JOB | |
| 7 | PWV-2-II | SCRAPE CLEAN TUBES IN FIREBOX, PASSES AND VACUUM PASSES (360 SF) | .02184 3.70080 | JOB JOB | |
| 8 | PWNU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .15300 | JOB | |

VT-236 = 15.72409 HRS PER JOB

VT-237

CLEAN FIRESIDE OF LIGHTLY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (10'X 16'X 20'), TWO PASSES, AND 317 TUBES (BY SCRAPING).-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|-------------------|------------|-----|
| 1 | PWU-1-8557 | ENTER AND LEAVE MANHOLES 12 TIMES | .11280 | JOB | |
| 2 | PWS-2-III | REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM | 3.23232 | JOB | |
| 3 | PWS-2-IV | LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE | 3.66320 | JOB | |
| 4 | PWA-5-II | MATERIAL HANDLING | 3.31488 | JOB | |
| 5 | PWS-2-III | RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE | 1.98912 | JOB | |
| 6 | PMV-2-II | SCRAPE AND BRUSH 30% OF FIREBOX WALLS AND CEILING (1000 SF TOTAL) (300 SF SCRAPE) | .02184 3.08400 | JOB JOB | |
| 7 | PMV-2-II | SCRAPE CLEAN 631 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES. | .02184 6.48668 | JOB JOB | |
| 8 | PWU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .17000 | JOB | |

VT-237 = 22.09868 HRS PER JOB

VT-238

CLEAN FIRESIDE OF LIGHTLY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (14'X 20'X 30'), TWO PASSES, AND 400 TUBES (BY SCRAPING).-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, VACUUMING TOP OF FIREBOX, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|-------------------|------------|-----|
| 1 | PWU-1-8557 | ENTER AND LEAVE MANHOLE 12 TIMES | .11280 | JOB | |
| 2 | PWS-2-III | REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM | 3.97924 | JOB | |
| 3 | PWS-2-IV | REMOVE LOOSE SLAG | 4.52200 | JOB | |
| 4 | PWA-5-II | MATERIAL HANDLING | 4.04001 | JOB | |
| 5 | PWS-2-III | RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE | 3.48096 | JOB | |
| 6 | PMV-2-II | SCRAPE AND BRUSH 30% OF FIREBOX WALLS AND CEILING (1900 SF TOTAL) (570 SF SCRAPE) | .02184 5.85960 | JOB JOB | |
| 7 | PMV-2-II | SCRAPE CLEAN 794 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES | .02184 8.16232 | JOB JOB | |
| 8 | PWU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .17000 | JOB | |

VT-238 = 30.36960 HRS PER JOB

VT-239

CLEAN FIRESIDE OF HEAVILY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX (8'X 13'X 20'), TWO PASSES, AND 182 TUBES (BY SCRAPING) AND VACUUMING TOP OF FIREBOX.-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|-------------------|------------|-----|
| 1 | PMU-1-8026 | KNOCK DOWN SLAG BY REACHING THROUGH EXPLOSION-PROOF DOOR WITH HAMMER | .11480 | JOB | |
| 2 | PMU-1-8027 | CLEAN SEVEN INSULATION BATS BY SHAVING IN FIREBOX | .25130 | JOB | |
| 3 | PMU-2-I | VACUUM TOP OF FIREBOX | .18480 .06240 | JOB JOB | |
| 4 | PMU-1-8557 | ENTER AND LEAVE MANHOLES 10 TIMES | .00400 | JOB | |
| 5 | PMS-2-III | REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM | 5.92592 | JOB | |
| 6 | PMS-2-IV | LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE | 6.56880 | JOB | |
| 7 | PMA-5-II | MATERIAL HANDLING | 8.28720 | JOB | |
| 8 | PMS-2-III | RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE | 3.68816 | JOB | |
| 9 | PMU-2-II | SCRAPE AND BRUSH 70% OF FIREBOX WALLS AND CEILING (780 SF TOTAL) (546 SF SCRAPED) | .02184 9.61288 | JOB JOB | |
| 10 | PMU-2-II | SCRAPE CLEAN 837 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES | .02184 8.60436 | JOB JOB | |
| 11 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .15300 | JOB | |

VT-239 • 39.59329 HRS PER JOB

VT-240

CLEAN FIRESIDE OF HEAVILY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX(10'X 16'X 20'), TWO PASSES, AND 420 TUBES (BY SCRAPING) AND VACUUMING TOP OF FIREBOX.-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|--------------------|------------|-----|
| 1 | PMU-1-8026 | KNOCK DOWN SLAG BY REACHING THROUGH EXPLOSION-PROOF DOOR WITH HAMMER | .11480 | JOB | |
| 2 | PMU-1-8027 | CLEAN INSULATION BATS BY SHAKING IN FIREBOX | .32310 | JOB | |
| 3 | PMV-2-I | VACUUM TOP OF FIREBOX | .18680 .09600 | JOB JOB | |
| 4 | PMU-1-8557 | ENTER AND LEAVE MANHOLES | .11280 | JOB | |
| 5 | PMS-2-III | REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM | 7.94208 | JOB | |
| 6 | PMS-2-IV | LOAD LOOSE SLAG INTO WHEELBARROW AND REMOVE | 8.47280 | JOB | |
| 7 | PMA-3-II | MATERIAL HANDLING | 7.46566 | JOB | |
| 8 | PMS-2-III | RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE LINE | 4.64128 | JOB | |
| 9 | PMV-2-II | SCRAPE AND BRUSH 708 SF OF FIREBOX WALLS AND CEILING (1000 SF TOTAL) (700 SF SCRAPED) | .02184 7.19600 | JOB JOB | |
| 10 | PMV-2-II | SCRAPE CLEAN 1932 SF OF TUBES IN FIREBOX AND PASSES AND VACUUM PASSES | .02184 19.86096 | JOB JOB | |
| 11 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .20400 | JOB | |

VT-240 = 56.45995 HRS PER JOB

VT-241

CLEAN FIRESIDE OF HEAVILY SLAGGED WATER TUBE BOILER.--INCLUDES REMOVING SLAG AND LOOSE CINDERS, CLEANING FIREBOX(14'X 20'X 30'), TWO PASSES, AND 600 TUBES (BY SCRAPING) AND VACUUMING TOP OF FIREBOX.-- DOES NOT INCLUDE ERECTING OR DISMANTLING SCAFFOLDING, CLEANING SUPERHEATER TUBES OR HEADER, AIR PREHEATER OR PRECIPITATOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|----------|-------|-----|
| 1 | PWMU-1-8026 | KNOCK DOWN SLAG BY REACHING THROUGH EXPLOSION-PROOF DOOR WITH HAMMER | .26240 | JOB | |
| 2 | PWMU-1-8027 | CLEAN INSULATION SATS BY SHAKING IN FIREBOX | .43080 | JOB | |
| 3 | PWV-2-I | VACUUM TOP OF FIREBOX | .18680 | JOB | |
| | | | .16800 | JOB | |
| 4 | PWMU-1-8557 | ENTER AND LEAVE MANHOLE | .14100 | JOB | |
| 5 | PWS-2-III | REMOVE SLAG AND LOOSE CINDERS FROM PASSES OVER LOWER DRUM | 9.28256 | JOB | |
| 6 | PWS-2-IV | REMOVE LOOSE SLAG | 10.47200 | JOB | |
| 7 | PWA-5-II | MATERIAL HANDLING | 9.53028 | JOB | |
| 8 | PWS-2-III | RAKE LOOSE CINDERS FROM FIREBOX FLOOR INTO SUCTION DISCHARGE | 8.12224 | JOB | |
| 9 | PWV-2-II | SCRAPE AND BRUSH TOP OF WALLS AND CEILINGS IN FIREBOX (1900 SF TOTAL) (1330 SF SCRAPED) | .02184 | JOB | |
| | | | 13.67240 | JOB | |
| 10 | PWV-2-II | SCRAPE CLEAN 2778 SF OF TUBES IN FIREBOX, PASSES AND VACUUM PASSES | .02184 | JOB | |
| | | | 28.55784 | JOB | |
| 11 | PWMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .23800 | JOB | |

VT-241 = 81.10799 HRS PER JOB

VT-242

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING INSIDE OF DRUM (3'1.5"X 20' LONG) AND RUNNING WATER (UNDER HIGH PRESSURE) IN 800 TUBE OPENINGS.-- DOES NOT INCLUDE TURBINING TUBES OR REMOVING OR REINSTALLING INTERNAL BAPPLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|--------|-------|-----|
| 1 | PWMU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .01880 | JOB | |
| 2 | PWV-2-I | CLEAN INSIDE DRUM BY HOISING DOWN | .18680 | JOB | |
| | | | .18960 | JOB | |
| 3 | PWV-2-I | WASH TUBE OPENINGS IN BOILER BY FLUSHING WITH WATER | .18680 | JOB | |
| | | | .48000 | JOB | |
| 4 | PWA-5-I | MATERIAL HANDLING | .03453 | JOB | |
| 5 | PWMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .05100 | JOB | |

VT-242 = 1.14753 HRS PER JOB

VT-243 CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (3" I.D. X 10' LONG), TURBINING 60 TUBES (1" TO 3" DIA. X 10" TO 20" LONG). DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAPFLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|-------------------|------------|-----|
| 1 | PWU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PWU-1-8012 | UNWIND AND WIND HOSE SECTIONS | .03560 | JOB | |
| 3 | PWU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .07520 | JOB | |
| 4 | PWQ-14-IV | TURN VALVE ON AND OFF | .06768 | JOB | |
| 5 | PWV-13-XI | PUSH 3/4" DIA. TURBINING AIR HOSE IN AND PULL OUT 60 (1" TO 3" DIA.) TUBES 10" TO 20" LONG | .19410 1.08000 | JOB JOB | |
| 6 | PWU-1-8011 | REMOVE AND INSTALL TURBINING HEAD | .29280 | JOB | |
| 7 | PWV-2-I | CLEAN INSIDE DRUM BY HOISING DOWN | .18680 .05700 | JOB JOB | |
| 8 | PWV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 .49344 | JOB JOB | |
| 9 | PWA-5-II | MATERIAL HANDLING | .10359 | JOB | |
| 10 | PWU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .00680 | JOB | |

VT-243 = 2.65844 HRS PER JOB

VT-244 CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (3" I.D. X 10' LONG) TURBINING 110 TUBES (1" TO 3" DIA. X 10" TO 20" LONG). DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAPFLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|-------------------|------------|-----|
| 1 | PWU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PWU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PWU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .08460 | JOB | |
| 4 | PWQ-14-IV | TURN VALVE ON AND OFF | .07614 | JOB | |
| 5 | PWV-13-X | PUSH 3/4" DIA. TURBINING AIR HOSE IN AND PULL OUT 110 (1" TO 3") TUBES 10" TO 20" LONG | .19410 4.62000 | JOB JOB | |
| 6 | PWU-1-8011 | REMOVE AND INSTALL TURBINING HEAD | .36400 | JOB | |
| 7 | PWV-2-I | CLEAN INSIDE DRUM BY HOISING DOWN | .18680 .05700 | JOB JOB | |
| 8 | PWV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 .49344 | JOB JOB | |
| 9 | PWA-5-II | MATERIAL HANDLING | .10359 | JOB | |
| 10 | PWU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .01020 | JOB | |

VT-244 = 6.29290 HRS PER JOB

VT-245 CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (3" I.D. X 20" LONG) AND TURBINING 98 TUBES (2 1/2" TO 4" DIA. X 30" TO 50" LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAPPLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|-------------------|------------|-----|
| 1 | PMU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PMU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .09400 | JOB | |
| 4 | PMQ-14-IV | TURN VALVE ON AND OFF | .07614 | JOB | |
| 5 | PMV-13-II | PUSH 1 1/4" DIA. TURBINING AIR HOSE IN AND PULL OUT 98 (2 1/4" TO 4" DIA.) TUBES, 30" TO 50" LONG | .02408 1.29360 | JOB JOB | |
| 6 | PMU-1-8011 | REMOVE AND INSTALL TURBINING HEAD | .36600 | JOB | |
| 7 | PMV-2-I | CLEAN INSIDE DRUM BY HOISING DOWN | .18680 .11400 | JOB JOB | |
| 8 | PMV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 .97660 | JOB JOB | |
| 9 | PMA-3-II | MATERIAL HANDLING | .10359 | JOB | |
| 10 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .08500 | JOB | |

VT-245 = 3.42084 HRS PER JOB

VT-246 CLEAN WATERSIDE OF WATER TUBE BOILER.--INCLUDES WASHING AND SCRAPING DRUM (3" I.D. X 20" LONG) AND TURBINING 141 TUBES (2 1/2" TO 4" DIA. X 30" TO 50" LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAPPLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|-------------------|------------|-----|
| 1 | PMU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PMU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .10340 | JOB | |
| 4 | PMQ-14-IV | TURN VALVE ON AND OFF | .08460 | JOB | |
| 5 | PMV-13-X | PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 141 (2 1/2" TO 4") TUBES, 30" TO 50" LONG | .19410 5.92200 | JOB JOB | |
| 6 | PMU-1-8011 | REMOVE AND INSTALL TURBINING HEAD | .36600 | JOB | |
| 7 | PMV-2-I | CLEAN INSIDE DRUM BY HOISING DOWN | .18680 .11400 | JOB JOB | |
| 8 | PMV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 .97660 | JOB JOB | |
| 9 | PMA-3-II | MATERIAL HANDLING | .10359 | JOB | |
| 10 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .10200 | JOB | |

VT-246 = 8.25412 HRS PER JOB

VT-247

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (3'I.D. X 20' LONG) AND TURBINING 240 TUBES (2 1/2" TO 4" DIA. X 30" TO 50" LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAPPLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|--------------------|------------|-----|
| 1 | PWMU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PWMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PWMU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .11280 | JOB | |
| 4 | PWQ-14-IV | TURN VALVE ON AND OFF | .10152 | JOB | |
| 5 | PWV-13-X | PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 240 (2 1/2" TO 4") TUBES 30" TO 50" LONG | .19410 10.08000 | JOB JOB | |
| 6 | PWMU-1-8011 | REMOVE AND INSTALL TURBINING HEADS | .36600 | JOB | |
| 7 | PWV-2-I | CLEAN INSIDE DRUM BY HOSEING DOWN | .18680 .11400 | JOB JOB | |
| 8 | PWV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 .97660 | JOB JOB | |
| 9 | PWA-5-II | MATERIAL HANDLING | .10359 | JOB | |
| 10 | PWMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .11900 | JOB | |

VT-247 = 12.45545 HRS PER JOB

VT-248

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (3'I.D. X 20' LONG) AND TURBINING 321 TUBES (1 1/2" TO 4" DIA. X 30" TO 50" LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAPPLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|--------------------|------------|-----|
| 1 | PWMU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PWMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PWMU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .14100 | JOB | |
| 4 | PWQ-14-IV | TURN VALVE ON AND OFF | .11844 | JOB | |
| 5 | PWV-13-X | PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 321 (2 1/2" TO 4") TUBES 30" TO 50" LONG | .19410 13.48200 | JOB JOB | |
| 6 | PWMU-1-8005 | REMOVE AND INSTALL TURBINING HEAD | .02400 | JOB | |
| 7 | PWV-2-I | CLEAN INSIDE OF DRUM BY HOSEING DOWN | .18649 .11400 | JOB JOB | |
| 8 | PWV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 .97660 | JOB JOB | |
| 9 | PWA-5-II | MATERIAL HANDLING | .10359 | JOB | |
| 10 | PWMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .13600 | JOB | |

VT-248 = 15.57757 HRS PER JOB

VT-249

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES
WASHING AND SCRAPING DRUM (5' I.D. X 20' LONG) AND
TURBINING 475 TUBES (2 1/2" TO 4" DIA. X 30' TO 50'
LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING
INTERNAL BAPPLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|--------------------|------------|-----|
| 1 | PMU-1-8552 | CONNECT AND DISCONNECT HOSE BIDS | .04360 | JOB | |
| 2 | PMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PMU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .18800 | JOB | |
| 4 | PMQ-14-IV | TURN VALVE ON AND OFF | .13228 | JOB | |
| 5 | PMV-13-X | PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 475 (2 1/2" TO 4") TUBES 30' TO 50' LONG | .19410 19.95000 | JOB JOB | |
| 6 | PMU-1-8005 | REMOVE AND INSTALL TURBINE HEAD | .02800 | JOB | |
| 7 | PMV-2-I | CLEAN INSIDE DRUM BY HOISING | .18680 .18960 | JOB JOB | |
| 8 | PMV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 1.62424 | JOB JOB | |
| 9 | PMA-5-II | MATERIAL HANDLING | .10339 | JOB | |
| 10 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .15300 | JOB | |

VT-249 = 22.87064 HRS PER JOB

VT-250

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES
WASHING AND SCRAPING DRUM (5' I.D. X 20' LONG) AND
TURBINING 590 TUBES (2 1/2" TO 4" DIA. X 30' TO 50'
LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING
INTERNAL BAPPLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|--------------------|------------|-----|
| 1 | PMU-1-8552 | CONNECT AND DISCONNECT HOSE BIDS | .04360 | JOB | |
| 2 | PMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PMU-1-8557 | ENTER AND LEAVE DRUM MANHOLE | .10340 | JOB | |
| 4 | PMQ-14-IV | TURN VALVE ON AND OFF | .16920 | JOB | |
| 5 | PMV-13-X | PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 590 (2 1/2" TO 4") TUBES 30' TO 50' LONG | .19410 24.78000 | JOB JOB | |
| 6 | PMU-1-8011 | REMOVE AND INSTALL TURBINING HEAD | .58560 | JOB | |
| 7 | PMV-2-I | CLEAN INSIDE DRUM BY HOISING DOWN | .18680 .18960 | JOB JOB | |
| 8 | PMV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 1.62424 | JOB JOB | |
| 9 | PMA-5-II | MATERIAL HANDLING | .20718 | JOB | |
| 10 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .15300 | JOB | |

VT-250 = 28.29415 HRS PER JOB

VT-251

CLEAN WATERSIDE OF WATER TUBE BOILER.-- INCLUDES WASHING AND SCRAPING DRUM (5' I.D. X 20' LONG) AND TURBINING 732 TUBES (2 1/2" TO 4" DIA. X 30" TO 50" LONG).-- DOES NOT INCLUDE REMOVING OR REINSTALLING INTERNAL BAFFLING.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|--------------------|------------|-----|
| 1 | PWMU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PWMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PWMU-1-8357 | ENTER AND LEAVE DRUM MANHOLE | .22560 | JOB | |
| 4 | PMQ-14-IV | TURN VALVE ON AND OFF | .16920 | JOB | |
| 5 | PMV-13-X | PUSH 1 1/2" TURBINING AIR HOSE IN AND PULL OUT OF 732 (2 1/2" TO 4") TUBES 30" TO 50" LONG | .19410 30.74400 | JOB JOB | |
| 6 | PWMU-1-8005 | REMOVE AND INSTALL TURBINING HEADS | .03200 | JOB | |
| 7 | PMV-2-I | CLEAN INSIDE DRUM BY HOISING DOWN | .18680 .18960 | JOB JOB | |
| 8 | PMV-2-II | SCRAPE 50% OF DRUM INTERIOR | .02184 1.62424 | JOB JOB | |
| 9 | PWA-5-II | MATERIAL HANDLING | .20718 | JOB | |
| 10 | PWMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .17000 | JOB | |

VT-251 • 33.84375 HRS PER JOB

VT-252

CLEAN FIRESIDE OF AIR PREHEATER.-- INCLUDES WASHING 432 TUBES (2" DIA. X 20' LONG) WITH 1 1/2" WATER HOSE AND CLEANING "SMOKE" BOX UNDER AIR PREHEATER TUBES USING AIR HOSE AND SHOVEL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|------------------|------------|-----|
| 1 | PWMU-1-8552 | CONNECT AND DISCONNECT HOSE TO BIBS | .04360 | JOB | |
| 2 | PWMU-1-8012 | UNWIND AND WIND HOSE SECTIONS | .03560 | JOB | |
| 3 | PMQ-14-IV | TURN VALVE ON AND OFF | .01692 | JOB | |
| 4 | PWMU-1-8010 | PUSH WATER HOSE IN AND PULL OUT OF 432 (2") TUBES 20' LONG | 11.31840 | JOB | |
| 5 | PWMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .13600 | JOB | |
| 6 | PWMU-1-8357 | ENTER AND LEAVE "SMOKE" BOX | .01880 | JOB | |
| 7 | PMV-2-I | HOSE 150 SP OF FLY ASH OUT OF "SMOKE" BOX | .18680 .09000 | JOB JOB | |
| 8 | PMV-2-III | SHOVEL HARDENED FLY ASH OUT OF "SMOKE" BOX | .16576 | JOB | |
| 9 | PWA-5-II | MATERIAL HANDLING | .18359 | JOB | |

VT-252 • 12.11547 HRS PER JOB

VT-253

CLEAN FIRESIDE OF AIR PREHEATER.-- INCLUDES WASH-
ING 675 TUBES (2 1/2" DIA. X 30" LONG) WITH 1 1/2"
WATER HOSE AND CLEANING "SMOKE" BOX UNDER AIR PRE-
HEATER TUBES USING AIR HOSE AND SHOVEL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|------------------|------------|-----|
| 1 | PMU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PMQ-14-IV | TURN VALVE ON AND OFF | .01692 | JOB | |
| 4 | PMU-1-8010 | PUSH WATER HOSE IN AND OUT OF 675 (2 1/2"DIA.) TUBES 30" LONG | 17.68500 | JOB | |
| 5 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .17000 | JOB | |
| 6 | PMU-1-8557 | ENTER AND LEAVE "SMOKE" BOX | .01880 | JOB | |
| 7 | PMV-2-I | HOSE FLY ASH OUT OF "SMOKE" BOX * AVG. OF 250 SQ. FT. | .18680 .15000 | JOB JOB | |
| 8 | PMU-2-III | SHOVEL HARDENED FLY ASH OUT OF "SMOKE" BOX | .58016 | JOB | |
| 9 | PMA-5-II | MATERIAL HANDLING | .20718 | JOB | |
| 10 | PMQ-14-IV | TURN VALVE ON AND OFF | .01692 | JOB | |

VT-253 = 19.11097 HRS PER JOB

VT-254

CLEAN FIRESIDE OF AIR PREHEATER.--INCLUDES WASHING
1024 TUBES (2 1/2" DIA. X 30" LONG) WITH 1 1/2"
WATER HOSE AND CLEANING "SMOKE" BOX UNDER AIR PRE-
HEATER TUBES USING AIR HOSE AND SHOVEL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|------------------|------------|-----|
| 1 | PMU-1-8552 | CONNECT AND DISCONNECT HOSE BIBS | .04360 | JOB | |
| 2 | PMU-1-8012 | UNWIND AND WIND HOSES | .03560 | JOB | |
| 3 | PMQ-14-IV | TURN VALVE ON AND OFF | .03384 | JOB | |
| 4 | PMU-1-8010 | PUSH WATER HOSE IN AND PULL OUT OF 1024 (2 1/2") TUBES 30" LONG | 26.82880 | JOB | |
| 5 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .20400 | JOB | |
| 6 | PMU-1-8557 | ENTER AND LEAVE "SMOKE" BOX | .01880 | JOB | |
| 7 | PMV-2-I | HOSE FLY ASH OUT OF "SMOKE" BOX * AVG. OF 200 SQ. FT. | .18680 .12000 | JOB JOB | |
| 8 | PMU-2-III | SHOVEL HARDENED FLY ASH OUT OF "SMOKE" BOX | .45584 | JOB | |
| 9 | PMA-5-II | MATERIAL HANDLING | .20718 | JOB | |

VT-254 = 28.13445 HRS PER JOB

VT-255 CLEAN FIRESIDE OF PRECIPITATOR.-- INCLUDES PUSHING AN AIR HOSE DOWN 36 TUBES (4" DIA. X 8" LONG) AND BLOWING OUT THE COMPARTMENT AT TOP OF TUBES.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|--|-------------------|------------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PMQ-14-IV | TURN VALVE ON AND OFF | .00846 | JOB | |
| 2 | PMU-1-8557 | ENTER AND LEAVE PRECIPITATOR OPENING | .01800 | JOB | |
| 3 | PMV-13-VII | PUSH AIR HOSE IN AND PULL OUT OF 36 (4") TUBES 8" TO 12" LONG | .19410 1.03680 | JOB JOB | |
| 4 | PMV-2-I | BLOW CLEAN INSIDE PRECIPITATOR COMPARTMENT * AVG. OF 90 SQ. FT. | .18680 .05400 | JOB JOB | |
| 5 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .06800 | JOB | |
| 6 | PMA-5-II | MATERIAL HANDLING. | .20718 | JOB | |

VT-255 = 1.77414 HRS PER JOB

VT-256 CLEAN SUPERHEATER HAVING 120 TUBES IN PASSES OVER LOWER DRUM USING SCRAPER, AND CLEAN HEADER BOX BY VACUUMING 250 SQ. FT. OF FINE FLY ASH.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|-------------------|------------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PMV-2-I | VACUUM SUPERHEATER BOX CONTAINING 250 SF OBTAIN- ABLE AREA | .18680 .19000 | JOB JOB | |
| 2 | PMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .06800 | JOB | |
| 3 | PMA-5-II | MATERIAL HANDLING | .20718 | JOB | |
| 4 | PMU-1-8557 | ENTER AND LEAVE MANHOLE | .02820 | JOB | |
| 5 | PMV-2-II | SCRAPE CLEAN SUPERHEATER TUBES IN PASS OVER LOWER DRUM | .02184 3.87556 | JOB JOB | |

VT-256 = 4.53758 HRS PER JOB

VT-257 CLEAN 8" LONG FIRE TUBES IN FIRE TUBE BOILER WITH SCRAPER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|---|------------------|-------------|-------|
| 00 | ***** | ***** | ***** | ***** | ***** |
| 1 | PMV-13-I | CLEAN BOILER TUBES 8" LONG WITH SCRAPER | .02408 .00880 | JOB TUBE | |

VT-257 = .02408 HRS PER JOB + .00880 HRS PER TUBE

VT-258 CLEAN 8" LONG FIRE TUBES IN FIRE TUBE BOILER WITH PNEUMATIC TURBINING TOOL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|--|------------------|-------------|-----|
| 1 | PMV-13-VI | CLEAN BOILER TUBES 8" LONG WITH PNEUMATIC TURBINING TOOL | .19410 .00960 | JOB TUBE | |

VT-258 = .19410 HRS PER JOB + .00960 HRS PER TUBE

VT-259 CLEAN 12" LONG FIRE TUBES IN FIRE TUBE BOILER WITH SCRAPER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|--|------------------|-------------|-----|
| 1 | PMV-13-VI | CLEAN BOILER TUBES 12" LONG WITH SCRAPER | .02408 .01320 | JOB TUBE | |

VT-259 = .02408 HRS PER JOB + .01320 HRS PER TUBE

VT-260 CLEAN 12" LONG FIRE TUBES IN FIRE TUBE BOILER WITH PNEUMATIC TURBINING TOOL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|------------------|-------------|-----|
| 1 | PMV-13-VII | CLEAN BOILER TUBES 12" LONG WITH PNEUMATIC TURBINING TOOL | .19410 .01440 | JOB TUBE | |

VT-260 = .19410 HRS PER JOB + .01440 HRS PER TUBE

VT-261 CLEAN 16" LONG FIRE TUBES IN FIRE TUBE BOILER WITH SCRAPER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|--|------------------|-------------|-----|
| 1 | PMV-13-VIII | CLEAN BOILER TUBES 16" LONG WITH SCRAPER | .02408 .01760 | JOB TUBE | |

VT-261 = .02408 HRS PER JOB + .01760 HRS PER TUBE

VT-262 CLEAN 16" LONG FIRE TUBES IN FIRE TUBE BOILER WITH PNEUMATIC TURBINING TOOL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|------------------|-------------|-----|
| 1 | PMV-13-VIII | CLEAN BOILER TUBES 16" LONG WITH PNEUMATIC TURBINING TOOL | .19410 .01920 | JOB TUBE | |

VT-262 = .19410 HRS PER JOB + .01920 HRS PER TUBE

VT-263 CLEAN 20' LONG FIRE TUBES IN FIRE TUBE BOILER WITH
PNEUMATIC TURSINING TOOL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|---|--------|-------|-----|
| 1 | PMV-13-IX | CLEAN BOILER TUBES 20' LONG WITH PNEUMATIC TURSINING TOOL. | .19410 | JOB | |
| | | | .02400 | TUBE | |

VT 263 = .19410 HRS PER JOB + .02400 HRS PER TUBE

VT-264 CLEAN (1) TUBE SHEET COMPARTMENT IN FIRE TUBE
BOILER WITH VACUUM CLEANER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|------------------------------|--------|-----------|-----|
| 1 | PMV-13-IV | CLEAN TUBE SHEET COMPARTMENT | .74708 | COMPARTMT | |

VT-264 = .74708 HRS PER COMPARTMT

VT-265 CLEAN FIRE BOX IN FIRE TUBE BOILER

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-----------------------|--------|-------|-----|
| 1 | PMV-13-V | CLEAN FIRE BOX | .44148 | JOB | |

VT-265 = .44148 HRS PER JOB

VT-266 CLEAN INTERIOR OF DRUM OF FIRE TUBE BOILER (1,205
LB./HR. OR 36 HP).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-----------------------|--------|-------|-----|
| 1 | PMV-2-I | WASH INTERIOR OF DRUM | .18680 | JOB | |
| | | | .24300 | JOB | |
| 2 | 4210 | INSPECT DRUM | .30000 | JOB | |
| 3 | PMV-11-IV | REMOVE MANHOLE COVER | .09723 | JOB | |
| 4 | PMV-11-V | INSTALL MANHOLE COVER | .28614 | JOB | |
| 5 | PMA-S-I | MATERIAL HANDLING | .06906 | JOB | |

VT-266 = 1.10223 HRS PER JOB

VT-267 CLEAN INTERIOR OF DRUM OF FIRE TUBE BOILER (4,109 LB./HR. OR 125 HP).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-----------------------|--------|-------|-----|
| 1 | PMV-2-I | WASH INTERIOR OF DRUM | .18680 | JOS | |
| | | | .61300 | JOB | |
| 2 | 4210 | INSPECT DRUM | .37300 | JOS | |
| 3 | PMV-11-IV | REMOVE MANHOLE COVER | .09723 | JOS | |
| 4 | PMV-11-V | INSTALL MANHOLE COVER | .20614 | JOS | |
| 5 | PMA-5-I | MATERIAL HANDLING | .06906 | JOS | |

VT-267 = 1.54923 HRS PER JOS

VT-268 CLEAN INTERIOR OF DRUM OF FIRE TUBE BOILER (5,854 LB./HR. OR 175 HP).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-----------------------|---------|-------|-----|
| 1 | PMV-2-I | WASH INTERIOR OF DRUM | .18680 | JOS | |
| | | | 1.11340 | JOS | |
| 2 | 4210 | INSPECT DRUM | .45000 | JOB | |
| 3 | PMV-11-IV | REMOVE MANHOLE COVER | .09723 | JOS | |
| 4 | PMV-11-V | INSTALL MANHOLE COVER | .20614 | JOS | |
| 5 | PMA-5-I | MATERIAL HANDLING | .06906 | JOS | |

VT-268 = 2.12283 HRS PER JOB

VT-269 CLEAN INTERIOR OF DRUM OF FIRE TUBE BOILER (6,696 LB./HR. OR 200 HP).

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|-----------------------|---------|-------|-----|
| 1 | PMV-2-I | WASH INTERIOR OF DRUM | .18680 | JOS | |
| | | | 1.54860 | JOB | |
| 2 | 4210 | INSPECT DRUM | .52300 | JOB | |
| 3 | PMV-11-IV | REMOVE MANHOLE COVER | .09723 | JOS | |
| 4 | PMV-11-V | INSTALL MANHOLE COVER | .20614 | JOS | |
| 5 | PMA-5-I | MATERIAL HANDLING | .10359 | JOS | |

VT-269 = 2.66736 HRS PER JOB

VT-270 REMOVE BOILER TUBE (UP TO 4" O.D. X 20' LONG) THROUGH MANHOLE OR HANDHOLE (WITHOUT CUTTING INTO SECTIONS) AND INSTALL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|---|--------|-------|-----|
| 1 | PMV-15-IV | REMOVE BOILER TUBE UP TO 20' LONG AND 4" O.D. THROUGH MANHOLE/HANDHOLE WITHOUT CUTTING TUBE INTO SECTIONS | .28186 | TUBE | |
| 2 | PMV-15-V | INSTALL BOILER TUBE UP TO 20' LONG AND 4" O.D. | .61214 | TUBE | |

VT-270 = .89400 HRS PER TUBE

VT-271 REMOVE BOILER TUBE (UP TO 4" O.D. X 20" LONG) THROUGH MANHOLE (CUTTING INTO SECTIONS) AND INSTALL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|--|--------|-------|-----|
| 1 | PMV-15-III | REMOVE BOILER TUBE UP TO 20" LONG AND 4" O.D. THROUGH MANHOLE BY CUTTING INTO SMALLER PIECES | .32211 | TUBE | |
| 2 | PMV-15-V | INSTALL BOILER TUBE UP TO 20" LONG AND 4" O.D. | .61214 | TUBE | |

VT-271 = .93425 MRS PER TUBE

VT-272 REMOVE AND INSTALL BOILER TUBE (UP TO 4" O.D. X 20" LONG) THROUGH OWN HOLE.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|---|--------|-------|-----|
| 1 | PMV-15-II | REMOVE BOILER TUBE UP TO 20" LONG AND 4" O.D. THROUGH OWN HOLE | .40156 | TUBE | |
| 2 | PMV-15-V | INSTALL BOILER TUBE UP TO 20" LONG AND 4" O.D. THROUGH OWN HOLE | .61214 | TUBE | |

VT-272 = 1.01370 MRS PER TUBE

VT-273 REMOVE AIR PREHEATER TUBE (WITHOUT CUTTING INTO SECTIONS) AND INSTALL.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|------------|---|--------|-------|-----|
| 1 | PMV-15-IV | REMOVE BOILER TUBE UP TO 20" LONG AND 4" O.D. WITHOUT CUTTING INTO SECTIONS | .28166 | JOB | |
| 2 | PMV-15-VII | INSTALL AIR PREHEATER TUBE UP TO 20" LONG AND 4" O.D. USING HOIST | .64270 | JOB | |

VT-273 = .92436 MRS PER JOB

VT-274 REMOVE AND INSTALL TUBE SHEET COMPARTMENT DOOR AND DOOR FRAME.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|----|-----------|---|--------|-------|-----|
| 1 | PMV-15-I | REMOVE AND INSTALL TUBE SHEET COMPARTMENT DOOR AND DOOR FRAME | .80609 | JOB | |

VT-274 = .80608 MRS PER JOB

VT-275 INSTALL BOILER TUBE (UP TO 4" O.D. X 20' LONG)
USING MOIST.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|---|--------|-------|-----|
| 1 | PMV-15-VI | INSTALL BOILER TUBE UP TO 20' LONG AND 4" O.D. USING MOIST | .71638 | JOB | |

VT-275 = .71638 HRS PER JOB

VT-276 REMOVE AND INSTALL PUSH NIPPLES ON A CAST IRON LOW
PRESSURE SECTIONAL BOILER.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|--------|-------|-----|
| 1 | PMQ-14-IV | OPEN AND CLOSE SMALL VALVE | .11844 | JOB | |
| 2 | PMQ-14-IV | OPEN AND CLOSE SMALL VALVE | .11844 | JOB | |
| 3 | PMU-1-8552 | REMOVE AND INSTALL FLANGE NUT | .78480 | JOB | |
| 4 | PMU-1-8552 | REMOVE AND INSTALL FLANGE BOLT | .78480 | JOB | |
| 5 | PMU-1-8013 | REMOVE AND INSTALL GASKET | .32340 | JOB | |
| 6 | PMQ-4-VI | REMOVE AND INSTALL UNION | .49744 | JOB | |
| 7 | PMQ-4-I | REMOVE AND INSTALL PIPE SECTIONS LESS THAN 2" LONG | .43836 | JOB | |
| 8 | PMU-1-8552 | REMOVE AND INSTALL DRAIN NUT | .08720 | JOB | |
| 9 | PMU-1-8552 | REMOVE AND INSTALL DRAIN BOLT | .08720 | JOB | |
| 10 | PMN-10-IX | REMOVE AND INSTALL BOILER SECTION | .00332 | JOB | |
| 11 | PMU-1-8021 | REMOVE AND INSTALL NIPPLE | .14700 | JOB | |

VT-276 = 2.39039 HRS PER JOB

VT-277 CLEAN AND INSPECT UNIT HEATER IN PLACE.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|----------------------------|------------------|------------|-----|
| 1 | PMU-1-8558 | CLIMB UP AND DOWN SCAFFOLD | .05680 | JOB | |
| 2 | PMQ-14-II | MOVE SCAFFOLD | .00992 .00935 | JOB JOB | |
| 3 | PMU-1-9000 | REMOVE AND INSTALL SCREW | .17800 | JOB | |
| 4 | PMU-1-8021 | REMOVE AND INSTALL PANEL | .04900 | JOB | |
| 5 | PMQ-40-II | LUBRICATE MOTOR | .01172 | JOB | |
| 6 | PMU-1-8028 | CLEAN MOTOR | .08440 | JOB | |
| 7 | PMU-1-8028 | WIRE BRUSH COILS | .08440 | JOB | |
| 8 | PMU-1-8028 | CLEAN HOUSING | .08440 | JOB | |
| 9 | 4202 | INSPECT FOR LEAKS | .01200 | JOB | |

VT-277 = .57999 HRS PER JOB

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
|------------------------------|-------------|--|------------------|------------|-----|
| 1 | PWB-6-II | LOWER AND RAISE UNIT WITH BLOCK AND TACKLE | .64368 | J09 | |
| 2 | PWB-4-I | LASH AND UNLASH UNIT | .20584 | J08 | |
| 3 | PWMU-1-8552 | REMOVE AND INSTALL MOUNTING NUTS | .08720 | J09 | |
| 4 | PWMU-1-8552 | REMOVE AND INSTALL MOUNTING BOLTS | .08720 | J09 | |
| 5 | PWG-4-VI | REMOVE AND INSTALL UNION | .24972 | J09 | |
| 6 | PWG-4-VI | REMOVE AND INSTALL VALVE | .06218 | J08 | |
| 7 | PWG-4-VI | REMOVE AND INSTALL NIPPLE | .12436 | J09 | |
| 8 | PWG-4-VI | REMOVE AND INSTALL STRAINER | .06218 | J09 | |
| 9 | PWG-14-IV | OPEN AND CLOSE VALVE | .01692 | J09 | |
| 10 | PWA-5-II | POSITION UNIT | .20719 | J09 | |
| 11 | PWMU-1-8558 | CLIMB UP AND DOWN SCAFFOLD | .11360 | J09 | |
| 12 | PWG-14-II | MOVE SCAFFOLD | .00992 .01122 | J08 J09 | |
| 13 | PWMU-1-8552 | REMOVE AND INSTALL BOLT | .09910 | J09 | |
| 14 | PWMU-1-8000 | REMOVE AND INSTALL SCREW | .17800 | J09 | |
| 15 | PWMU-1-8021 | REMOVE AND INSTALL PANEL | .04900 | J09 | |
| 16 | PWG-40-II | LUBRICATE MOTOR | .01172 | J09 | |
| 17 | PWMU-1-8031 | CLEAN MOTOR | .13700 | J09 | |
| 18 | PWMU-1-8028 | WIRE BRUSH COILS | .08440 | J08 | |
| 19 | PWMU-1-8031 | CLEAN HOUSING | .13700 | J09 | |
| 20 | 4211 | INSPECT FOR LEAKS | .29200 | J09 | |
| 21 | PWA-5-II | MATERIAL HANDLING | .41436 | J08 | |
| VT-278 • 3.28157 HRS PER J09 | | | | | |

VT-279 REMOVE OLD UNIT HEATER AND INSTALL NEW.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V39 |
|----|------------|--|------------------|------------------|-----|
| 1 | PNB-8-II | LOWER AND RAISE UNIT WITH BLOCK AND TACKLE | .64348 | HEATER | |
| 2 | PNB-4-I | LASH AND UNLASH UNIT | .20584 | HEATER | |
| 3 | PMU-1-8552 | REMOVE AND INSTALL MOUNTING NUTS | .08720 | HEATER | |
| 4 | PMU-1-8552 | REMOVE AND INSTALL MOUNTING BOLTS | .08720 | HEATER | |
| 5 | PMQ-4-VI | REMOVE AND INSTALL UNION | .24872 | HEATER | |
| 6 | PMQ-4-VI | REMOVE AND INSTALL VALVE | .06218 | HEATER | |
| 7 | PMQ-4-VI | REMOVE AND INSTALL NIPPLE | .12436 | HEATER | |
| 8 | PMQ-4-VI | REMOVE AND INSTALL STRAINER | .06218 | HEATER | |
| 9 | PMQ-14-IV | OPEN AND CLOSE VALVE | .01692 | HEATER | |
| 10 | PMA-5-II | POSITION UNIT | .20718 | HEATER | |
| 11 | PMU-1-8558 | CLIMB UP AND DOWN SCAFFOLD | .11360 | HEATER | |
| 12 | PMQ-14-II | MOVE SCAFFOLD | .20992 .20933 | HEATER HEATER | |
| 13 | 4211 | INSPECT FOR LEAKS | .24200 | HEATER | |
| 14 | PMA-52-I | LAY OUT STOCK FOR HANGER | .80160 | HEATER | |
| 15 | PMQ-2-I | CUT STOCK FOR HANGER | .14868 | HEATER | |
| 16 | PWC-15-III | DRILL HOLES | .03080 .10148 | HEATER HEATER | |
| 17 | PMU-1-8021 | INSTALL HANGERS | .09200 | HEATER | |
| 18 | PMA-5-II | MATERIAL HANDLING | .41436 | HEATER | |

VT-279 = 3.76504 HRS PER HEATER

| | | | | | |
|--------|-------------|---|------------------|------------|-----|
| VT-280 | | REMOVE, DISASSEMBLE, CLEAN, INSPECT, TEST, REPAIR, ASSEMBLE, AND INSTALL ANY SIZE UNIT HEATER. INCLUDES REPAIR AN AVERAGE OF TWO LEAKS. USE OF SCAFFOLDING IS INCLUDED BUT ERECTION AND DISMANTLING IS NOT. | | | |
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
| 1 | PWB-8-II | LOWER AND RAISE UNIT WITH BLOCK AND TACKLE | .84348 | JOB | |
| 2 | PWB-4-I | LASH AND UNLASH UNIT | .20384 | JOB | |
| 3 | PWMU-1-8512 | REMOVE AND INSTALL MOUNTING NUTS | .08720 | JOB | |
| 4 | PWMU-1-8552 | REMOVE AND INSTALL MOUNTING BOLTS | .08720 | JOB | |
| 5 | PWQ-4-VI | REMOVE AND INSTALL UNION | .24872 | JOB | |
| 6 | PWQ-4-VI | REMOVE AND INSTALL VALVE | .06218 | JOB | |
| 7 | PWQ-4-VI | REMOVE AND INSTALL NIPPLE | .12436 | JOB | |
| 8 | PWQ-4-VI | REMOVE AND INSTALL STRAINER | .06218 | JOB | |
| 9 | PWQ-14-IV | OPEN AND CLOSE VALVE | .01692 | JOB | |
| 10 | PWA-5-II | POSITION UNIT | .20718 | JOB | |
| 11 | PWMU-1-8538 | CLIMB UP AND DOWN SCAFFOLD | .11360 | JOB | |
| 12 | PWQ-14-II | MOVE SCAFFOLDING | .00992 .00935 | JOB JOB | |
| 13 | PWMU-1-8552 | REMOVE AND INSTALL BOLTS | .08720 | JOB | |
| 14 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS | .17800 | JOB | |
| 15 | PWMU-1-8011 | REMOVE AND INSTALL PANEL | .07320 | JOB | |
| 16 | PWMU-1-8011 | REMOVE AND INSTALL MOTOR SUPPORT | .07320 | JOB | |
| 17 | PWMU-1-8022 | REMOVE AND INSTALL MOTOR AND FAN | .20560 | JOB | |
| 18 | PWG-4C-II | LUBRICATE MOTOR | .01172 | JOB | |
| 19 | PWMU-1-8031 | CLEAN MOTOR | .13700 | JOB | |
| 20 | PWMU-1-8028 | WIRE BRUSH COILS | .16880 | JOB | |
| 21 | PWMU-1-8026 | CLEAN SMALL PARTS | .16400 | JOB | |
| 22 | PWMU-1-8031 | CLEAN HOUSING | .13700 | JOB | |
| 23 | PWQ-4-I | REMOVE AND INSTALL FITTING | .14412 | JOB | |
| 24 | PWQ-4-I | CONNECT AND DISCONNECT TEST LINES | .07308 | JOB | |
| 25 | PWQ-14-IV | TURN STEAM ON AND OFF | .02538 | JOB | |
| 26 | PWQ-4-VI | REMOVE AND INSTALL NIPPLE | .24872 | JOB | |
| 27 | PWQ-4-VI | REMOVE AND INSTALL REDUCER | .12436 | JOB | |
| 28 | PWQ-4-VI | REMOVE AND INSTALL ELBOW | .12436 | JOB | |
| 29 | 4205 | INSPECT FOR LEAKS DURING REPAIR | .16900 | JOB | |
| 30 | 4211 | INSPECT FOR LEAKS AFTER REPAIR | .29200 | JOB | |
| 31 | PWEA-6-VI | SOLDER LEAKS IN ANY SIZE HEATING UNIT PIPES AS REQUIRED | .16060 .08030 | JOB JOB | |
| 32 | PWMU-1-8026 | CLEAN AREA AROUND LEAKS | .03280 | JOB | |
| 33 | PWQ-17-I | CUT OFF SECTION OF PIPE | .16857 | JOB | |
| 34 | PWEA-6-VI | SEAL ENDS OF PIPE | .16060 .04040 | JOB JOB | |
| 35 | PWA-5-II | MATERIAL HANDLING | .41436 | JOB | |
| VT-220 | | 5.39497 HRS PER JOB | | | |

VT-281 INSTALL GAS OR OIL-FIRED WALL-TYPE FURNACE.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---------------------------|--------|-------|-----|
| 1 | PWA-5-II | MATERIAL HANDLING | .10359 | JOB | |
| 2 | PWMU-1-8022 | POSITION FURNACE | .10280 | JOB | |
| 3 | PWQ-4-VI | CONNECT UNIONS | .03109 | JOB | |
| 4 | PWMU-1-8010 | INSTALL GRILLS AND PANELS | .05240 | JOB | |
| 5 | PWMU-1-8000 | INSTALL FASTENER | .09340 | JOB | |
| 6 | 4209 | CHECK OPERATION | .16700 | JOB | |
| 7 | PWQ-14-IV | TURN VALVE ON AND OFF | .00846 | JOB | |
| 8 | PWMU-1-8021 | CONNECT VENT STACK | .02450 | JOB | |
| 9 | PWMU-1-8000 | INSTALL SCREWS | .01780 | JOB | |

VT-281 = .56104 HRS PER JOB

VT-282 CLEAN ONE GAS-FILLED WALL FURNACE.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|------------------------------------|--------|-------|-----|
| 1 | PWQ-14-I | TURN VALVE OFF AND ON | .01270 | JOB | |
| 2 | PWQ-4-VI | DISCONNECT AND CONNECT UNION | .06218 | JOB | |
| 3 | PWMU-1-8010 | REMOVE AND INSTALL PANEL AND GRILL | .10480 | JOB | |
| 4 | PWMU-1-8000 | REMOVE AND INSTALL FASTENER | .10680 | JOB | |
| 5 | PWMU-1-8031 | CLEAN FURNACE AND WALL OPENINGS | .13700 | JOB | |
| 6 | 4209 | CHECK OPERATION | .16700 | JOB | |

VT-282 = .59048 HRS PER JOB

VT-283 REMOVE AND INSTALL GAS OR OIL FIRED WALL FURNACE

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|------------------------------------|--------|-------|-----|
| 1 | PWA-5-II | MATERIAL HANDLING | .20718 | JOB | |
| 2 | PWQ-14-IV | TURN VALVE ON AND OFF | .00846 | JOB | |
| 3 | PWQ-4-VI | DISCONNECT AND CONNECT UNION | .06218 | JOB | |
| 4 | PWMU-1-8013 | REMOVE AND INSTALL PANEL AND GRILL | .18480 | JOB | |
| 5 | PWMU-1-8000 | REMOVE AND INSTALL FASTENERS | .10680 | JOB | |
| 6 | PWMU-1-8022 | REMOVE AND INSTALL FURNACE | .20560 | JOB | |
| 7 | 4211 | CHECK OPERATION | .29200 | JOB | |

VT-283 = 1.06702 HRS PER JOB

| VT-284 | | INSTALL NEW UNIT HEATER | | | |
|------------------------------|-------------|----------------------------------|--------|-------|-----|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V39 |
| 1 | PWB-6-II | RAISE UNIT WITH BLOCK AND TACKLE | .32174 | JCB | |
| 2 | PWB-4-I | LASH AND UNLASH UNIT | .10292 | JCB | |
| 3 | PWMU-1-8552 | INSTALL MOUNTING BOLTS | .04360 | JCB | |
| 4 | PWMU-1-8552 | INSTALL MOUNTING NUTS | .04357 | JCB | |
| 5 | PWQ-4-VI | INSTALL UNION | .12436 | JCB | |
| 6 | PWQ-4-VI | INSTALL VALVE | .06219 | JCB | |
| 7 | PWQ-4-VI | INSTALL NIPPLE | .06219 | JCB | |
| 8 | PWQ-4-VI | INSTALL STRAINER | .02109 | JCB | |
| 9 | PWQ-14-IV | OPEN VALVE | .00846 | JCB | |
| 10 | PWQ-5-II | POSITION UNIT | .23301 | JCB | |
| 11 | PWMU-1-3558 | CLIMB UP AND DOWN SCAFFOLD | .04260 | JCB | |
| 12 | PWQ-14-II | MOVE SCAFFOLD | .00792 | JCB | |
| | | | .01122 | JCB | |
| 13 | PWEA-52-I | LAY OUT STOCK FOR HANGER | .80160 | JCB | |
| 14 | PWQ-2-I | CUT STOCK FOR HANGERS | .14863 | JCB | |
| 15 | PWC-15-III | DRILL HOLES | .03080 | JCB | |
| | | | .10148 | JCB | |
| 16 | PWMU-1-8021 | INSTALL HANGERS | .09800 | JCB | |
| 17 | 4211 | INSPECT FOR LEAKS | .29200 | JCB | |
| 18 | PWA-5-II | MATERIAL HANDLING | .20719 | JCB | |
| VT-284 = 2.77661 HRS PER JOB | | | | | |

| VT-285 | | CLEAN ONE OIL-FIRED FORCED HOT AIR WALL FURNACE. | | | |
|-----------------------------|-------------|--|--------|-------|-----|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
| 1 | PWQ-14-IV | OPEN AND CLOSE VALVE | .00846 | JCB | |
| 2 | PWQ-20-II | DRAIN OIL | .03040 | JCB | |
| 3 | PWMU-1-9000 | REMOVE AND INSTALL FASTENERS | .07120 | JCB | |
| 4 | PWQ-4-VI | DISCONNECT AND CONNECT | .06218 | JCB | |
| 5 | PWMU-1-8021 | REMOVE AND INSTALL BURNER | .04900 | JCB | |
| 6 | PWMU-1-8013 | DISASSEMBLE AND ASSEMBLE BURNER PARTS | .13480 | JCB | |
| 7 | PWMU-1-8026 | CLEAN PARTS | .04920 | JCB | |
| 8 | PWMU-1-8030 | CLEAN BURNER | .06790 | JCB | |
| 9 | PWMU-1-8030 | CLEAN PIPESCX | .06790 | JCB | |
| 10 | PWMU-1-8030 | CLEAN HOT AIR DUCT | .06790 | JCB | |
| 11 | PWMU-1-8013 | REMOVE AND INSTALL FILTER | .04620 | JCB | |
| 12 | 3600 | LIGHT BURNER AND ADJUST FLAME | .01300 | JCB | |
| 13 | PWMU-1-8027 | CLEAN MOTOR | .03590 | JCB | |
| 14 | PWG-40-II | LUBRICATE MOTOR | .01172 | JCB | |
| 15 | 4209 | CHECK AND INSPECT | .16700 | JCB | |
| VT-285 = .93276 HRS PER JOB | | | | | |

VT-236

DISASSEMBLE, CLEAN, INSPECT AND ASSEMBLE APARTMENT
SIZE OIL-FIRED SPACE HEATER (2 1/2" X 2 1/2" X 4")
OR OIL-FIRED FLOOR FURNACE.-- DOES NOT INCLUDE
CLEANING CHIMNEY OR CARBURETOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----------|------------|---|--------|-------------|-----|
| 1 | PMU-1-8010 | REMOVE AND INSTALL Baffles | .02620 | JOB | |
| 2 | PMU-1-8027 | CLEAN INSIDE HEATER | .10770 | JOB | |
| 3 | PMU-1-8027 | CLEAN OUTSIDE HEATER | .07180 | JOB | |
| 4 | PMU-1-IV | TURN OIL TANK VALVE OFF AND ON | .03384 | JOB | |
| 5 | PMU-1-8552 | DISCONNECT AND CONNECT OIL LINE TO FILTER | .02180 | JOB | |
| 6 | PMU-1-8552 | REMOVE AND INSTALL NUT ON FILTER CONTAINER | .02180 | JOB | |
| 7 | PMU-1-8026 | CLEAN FILTER | .01640 | JOB | |
| 8 | PMU-1-9000 | REMOVE AND INSTALL SCREWS ON CARBURETOR TOP | .07120 | JOB | |
| 9 | PMU-1-8552 | REMOVE AND INSTALL OIL LINE FROM HEATER TO CARBURETOR | .04360 | JOB | |
| 10 | PMU-1-8552 | REMOVE AND INSTALL STRAINER | .02180 | JOB | |
| 11 | 4208 | CHECK AND INSPECT | .04200 | JOB | |
| 12 | PMU-3-I | MATERIAL HANDLING | .06906 | JOB | |
| VT-236 = | | | .54720 | HRS PER JOB | |

VT-287

DISASSEMBLE, CLEAN, INSPECT AND ASSEMBLE APARTMENT
SIZE OIL-FIRED SPACE HEATER (2 1/2" X 2 1/2" X 4")
OR OIL-FIRED FLOOR FURNACE.--INCLUDES CLEANING
CHIMNEY AND CARBURETOR.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----------|------------|--|--------|-------------|-----|
| 1 | PMU-1-8000 | REMOVE AND INSTALL SCREW IN PIPE | .03560 | JOB | |
| 2 | PMU-1-8011 | REMOVE AND INSTALL PIPE FROM HEATER TO CHIMNEY | .07320 | JOB | |
| 3 | PMU-3-II | CARRY PIPE TO BE CLEANED AND RETURN | .10350 | JOB | |
| 4 | PMU-1-8027 | CLEAN PIPE | .07180 | JOB | |
| 5 | PMU-1-8052 | CLIMB UP AND DOWN LADDER | .04140 | JOB | |
| 6 | PMU-1-8027 | CLEAN CHIMNEY | .07180 | JOB | |
| 7 | PMU-1-8010 | REMOVE AND INSTALL Baffles | .02620 | JOB | |
| 8 | PMU-1-8027 | CLEAN INSIDE HEATER | .10770 | JOB | |
| 9 | PMU-1-8027 | CLEAN OUTSIDE HEATER | .07180 | JOB | |
| 10 | PMU-1-IV | TURN OIL TANK VALVE OFF AND ON | .03384 | JOB | |
| 11 | PMU-1-8552 | DISCONNECT AND CONNECT OIL LINE TO FILTER | .02180 | JOB | |
| 12 | PMU-1-8552 | REMOVE AND INSTALL NUT ON FILTER CONTAINER | .02180 | JOB | |
| 13 | PMU-1-8026 | CLEAN FILTER | .01640 | JOB | |
| 14 | PMU-1-8000 | REMOVE AND INSTALL FOUR SCREWS ON CARBURETOR TOP | .07120 | JOB | |
| 15 | PMU-1-8552 | REMOVE AND INSTALL OIL LINE FROM HEATER TO CARBURETOR | .04360 | JOB | |
| 16 | PMU-1-8552 | REMOVE AND INSTALL STRAINER | .02180 | JOB | |
| 17 | PMU-1-8552 | REMOVE AND INSTALL OIL LINE FROM HEATER TO OIL STORAGE | .02180 | JOB | |
| 18 | 4208 | CHECK AND INSPECT | .04200 | JOB | |
| 19 | PMU-3-I | MATERIAL HANDLING | .06906 | JOB | |
| VT-287 = | | | .96639 | HRS PER JOB | |

| VT-288 | | INSTALL 30-GALLON GAS-FIRED HOT WATER HEATER AND FILL TANK. | | | | |
|----------|-------------|---|--------|-------|-----|--|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 | |
| 1 | PWA-5-II | MATERIAL HANDLING | .10359 | JOB | | |
| 2 | PWMU-1-8022 | POSITION HEATER | .10280 | JOB | | |
| 3 | PMQ-4-VI | CONNECT UNIONS | .09327 | JOB | | |
| 4 | 4209 | CHECK OPERATION | .14700 | JOB | | |
| 5 | PMQ-14-IV | TURN VALVE ON AND OFF | .00846 | JOB | | |
| 6 | PWMU-1-8021 | CONNECT VENT STACK | .07450 | JOB | | |
| 7 | PWMU-1-8000 | ATTACH SCREWS | .01780 | JOB | | |
| 8 | 2147 | FILL TANK | .08100 | JOB | | |
| VT-288 = | | .59842 HRS PER JOB | | | | |

| VT-289 | | REMOVE AND INSTALL 30-GALLON GAS-FIRED HOT WATER HEATER | | | | |
|----------|-------------|---|--------|-------|-----|--|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 | |
| 1 | PWA-5-II | MATERIAL HANDLING | .20718 | JOB | | |
| 2 | PMQ-4-VI | DISCONNECT AND CONNECT UNION | .18654 | JOB | | |
| 3 | PWMU-1-8022 | REMOVE AND INSTALL HEATER | .20560 | JOB | | |
| 4 | PMQ-14-IV | TURN VALVE ON AND OFF | .00846 | JOB | | |
| 5 | PMQ-20-II | DRAIN AND FILL 30-GALLON TANK | .45600 | JOB | | |
| 6 | 4209 | CHECK OPERATION | .16700 | JOB | | |
| VT-289 = | | 1.23078 HRS PER JOB | | | | |

| VT-290 | | CLEAN 30-GALLON GAS-FIRED HOT WATER HEATER | | | | |
|----------|-------------|---|--------|-------|-----|--|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 | |
| 1 | PMQ-14-IV | CLOSE AND OPEN VALVE | .30846 | JOB | | |
| 2 | PWMU-1-8030 | CLEAN AND ADJUST MAIN BURNER, PILOT AND THERMO-COUPLE | .20370 | JOB | | |
| 3 | PWMU-1-8027 | CLEAN COMBUSTION CHAMBER AND BOTTOM OF TANK | .03590 | JOB | | |
| 4 | PMQ-20-II | FLUSH OUT HEATER | .45600 | JOB | | |
| 5 | 4208 | CHECK OPERATION OF SAFETY PILOT | .04200 | JOB | | |
| 6 | 5600 | LIGHT MAIN BURNER AND ADJUST FLAME | .01300 | JOB | | |
| 7 | 4210 | ASCERTAIN THAT HEATER CUTS OFF AT CORRECT TEMPERATURE | .07500 | JOB | | |
| 8 | 4208 | CHECK OPERATION OF RELIEF VALVE | .04200 | JOB | | |
| VT-290 = | | .87606 HRS PER JOB | | | | |

VT-291

DISASSEMBLE, CLEAN, LUBRICATE, INSPECT, AND REASSEMBLE APARTMENT SIZE GAS UNIT HEATER (2 1/2" X 2 1/2" X 3"). INCLUDES CLEANING CHIMNEY.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|-----------------------------|-------------|--|--------|-------|-----|
| 1 | PWMU-1-8005 | DISCONNECT AND CONNECT ELECTRIC PLUG FROM RECEPTACLE | .00400 | JOB | |
| 2 | PWMU-1-8013 | REMOVE AND INSTALL TOP FRONT COVER | .04620 | JOB | |
| 3 | PWMU-1-8006 | TURN GAS VALVE OFF AND ON | .01340 | JOB | |
| 4 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS | .03560 | JOB | |
| 5 | PWMU-1-8010 | REMOVE BOTTOM FRONT COVER | .01310 | JOB | |
| 6 | PWMU-1-8005 | REMOVE AND INSTALL FILTER | .00400 | JOB | |
| 7 | PWMU-1-8000 | DISCONNECT AND CONNECT THERMALCOUPLING AT MAIN LINE | .01780 | JOB | |
| 8 | PWMU-1-8000 | DISCONNECT AND CONNECT PILOT COUPLING AT MAIN LINE | .01780 | JOB | |
| 9 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS TO PILOT LIGHT ASSEMBLY | .03560 | JOB | |
| 10 | PWMU-1-8010 | REMOVE AND INSTALL PILOT LIGHT ASSEMBLY | .02620 | JOB | |
| 11 | PWMU-1-8000 | LOOSEN AND TIGHTEN TWO THUMB SCREWS | .03560 | JOB | |
| 12 | PWMU-1-8010 | REMOVE AND INSTALL BURNERS | .05240 | JOB | |
| 13 | PWMU-1-8030 | KNOCK SOOT FROM SIDE WALLS | .06790 | JOB | |
| 14 | PWMU-1-8030 | VACUUM AND WIPE UNIT | .06790 | JOB | |
| 15 | PWG-40-II | OIL MOTOR AND PAN | .02344 | JOB | |
| 16 | PWMU-1-8000 | DISCONNECT AND CONNECT SOLENOID VALVE NUT | .01780 | JOB | |
| 17 | PWMU-1-8005 | REMOVE AND INSTALL VALVE FROM SOLENOID | .00400 | JOB | |
| 18 | PWMU-1-8026 | CLEAN VALVE AND WIPE WITH OIL | .01640 | JOB | |
| 19 | PWMU-1-8000 | REMOVE AND INSTALL PILOT LINE | .01780 | JOB | |
| 20 | PWMU-1-8000 | REMOVE AND INSTALL FITTING TO PILOT LIGHT NOZZLE | .01780 | JOB | |
| 21 | PWMU-1-8026 | CLEAN NOZZLE | .01640 | JOB | |
| 22 | PWMU-1-8010 | REPLACE BOTTOM FRONT COVER | .01310 | JOB | |
| 23 | 9600 | LIGHT PILOT AND ADJUST | .01300 | JOB | |
| 24 | 4209 | TURN ON BURNERS AND CHECK FOR PAN TO COME ON | .16700 | JOB | |
| VT-291 = .74423 HRS PER JOB | | | | | |

VT-292 CLEAN, INSPECT AND LUBRICATE COLD WATER BLOWER UNIT WITH 2-CENTRIFUGAL (SQUIRREL CAGE) FANS (8" DIA.).
--INCLUDES DISASSEMBLE AND ASSEMBLE; VACUUM AND WIPE INSIDE UNIT AND BLOWER ASSEMBLY; INSPECT; AND LUBRICATE BLOWER BEARINGS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V39 |
|-----------------------------|-------------|--|--------|-------|-----|
| 1 | PWMU-1-3000 | REMOVE AND INSTALL SCREWS | .03560 | JOB | |
| 2 | PWMU-1-8021 | REMOVE AND INSTALL FRONT COVER | .04900 | JOB | |
| 3 | PWMU-1-8005 | DISCONNECT AND CONNECT ELECTRIC PLUG FROM RECEPTACLE | .00400 | JOB | |
| 4 | PWMU-1-8552 | REMOVE AND INSTALL MOUNTING BOLTS AND NUTS | .08720 | JOB | |
| 5 | PWMU-1-9021 | REMOVE AND INSTALL FRAME AND BLOWER ASSEMBLY | .04300 | JOB | |
| 6 | PWMU-1-8012 | REMOVE AND INSTALL FILTER | .01790 | JOB | |
| 7 | PWMU-1-8027 | VACUUM AND WIPE INSIDE UNIT | .03590 | JOB | |
| 8 | PWMU-1-8030 | VACUUM AND WIPE BLOWER ASSEMBLY | .08790 | JOB | |
| 9 | PWG-40-II | LUBRICATE BLOWER | .01172 | JOB | |
| VT-292 = .35612 HRS PER JOB | | | | | |

VT-293 CLEAN, INSPECT, ADJUST AND LUBRICATE BLOWER UNIT WITH 4-CENTRIFUGAL (SQUIRREL CAGE) FANS (8" DIA.).
--INCLUDES DISASSEMBLE AND ASSEMBLE; VACUUM AND WIPE INSIDE UNIT, BLOWER AND COVERS; INSPECT; MAKE ADJUSTMENTS; LUBRICATE MOVING PARTS.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V39 |
|-----------------------------|-------------|---|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS | .05340 | JOB | |
| 2 | PWMU-1-8021 | REMOVE AND INSTALL FRONT COVER | .04900 | JOB | |
| 3 | PWMU-1-8005 | TURN MOTOR OFF AND ON WITH KEY | .00400 | JOB | |
| 4 | PWMU-1-8000 | LOOSEN AND TIGHTEN SCREWS | .07120 | JOB | |
| 5 | PWMU-1-8010 | REMOVE AND INSTALL COVER PLATES | .05240 | JOB | |
| 6 | PWMU-1-8552 | REMOVE AND INSTALL THUMB SCREWS TO TOP COVER | .08720 | JOB | |
| 7 | PWMU-1-8021 | REMOVE AND INSTALL TOP COVER | .04900 | JOB | |
| 8 | PWMU-1-8005 | REMOVE AND INSTALL ELECTRIC PLUG FROM RECEPTACLE | .00400 | JOB | |
| 9 | PWMU-1-8000 | REMOVE AND INSTALL NUTS AND BOLTS ON BLOWER UNIT | .07120 | JOB | |
| 10 | PWMU-1-8011 | REMOVE AND INSTALL BLOWER UNIT | .14640 | JOB | |
| 11 | 2581 | INSPECT BLOWER, ALL MOVING PARTS AND SURROUNDING AREA | .00464 | JOB | |
| 12 | PWMU-1-8000 | REMOVE AND INSTALL TWO BRACKET SCREWS | .03560 | JOB | |
| 13 | PWMU-1-8012 | TURN MOTOR TO OIL AND RETURN | .01780 | JOB | |
| 14 | PWMU-1-8000 | REMOVE AND INSTALL TWO OIL PLUG COVER SCREWS | .03560 | JOB | |
| 15 | PWG-40-II | OIL MOTOR AT TWO LOCATIONS | .01172 | JOB | |
| 16 | PWMU-1-8012 | REMOVE AND INSTALL BOTTOM FILTER | .01780 | JOB | |
| 17 | PWMU-1-8000 | REMOVE AND INSTALL 3 THUMB SCREWS TO OUTSIDE VENT | .01780 | JOB | |
| 18 | PWMU-1-8013 | REMOVE AND INSTALL PLATE TO VENT | .04620 | JOB | |
| 19 | PWMU-1-8013 | REMOVE AND INSTALL FILTER TO OUTSIDE VENT | .04620 | JOB | |
| 20 | PWMU-1-8028 | VACUUM AND WIPE INSIDE UNIT, BLOWER, AND COVERS | .08440 | JOB | |
| 21 | PWM-3-I | OIL DAMPER AND MOVING PARTS | .00354 | JOB | |
| VT-293 = .93261 HRS PER JOB | | | | | |

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-------------|---|--------|-------|-----|
| 1 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS IN THERMOSTAT COVER TO REMOVE COVER | .03560 | JOB | |
| 2 | PWMU-1-8005 | REMOVE AND INSTALL THERMOSTAT COVER | .00400 | JOB | |
| 3 | PWMU-1-9000 | REMOVE AND INSTALL COVER SCREW TO NEEDLE VALVE | .01780 | JOB | |
| 4 | PWMU-1-9006 | OPEN AND CLOSE NEEDLE VALVE | .01340 | JOB | |
| 5 | PWMU-1-8552 | INSTALL AND REMOVE BRANCH LINE AIR GAUGE | .02180 | JOB | |
| 6 | PWMU-1-8553 | ADJUST THERMOSTAT | .00870 | JOB | |
| 7 | PWMU-1-8000 | REMOVE AND INSTALL PIN VALVE SET SCREW | .01780 | JOB | |
| 8 | PWMU-1-8006 | ADJUST SET SCREW | .00670 | JOB | |
| 9 | PWMU-1-8010 | REMOVE PIN VALVE GAUGE | .01310 | JOB | |
| 10 | PWMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .00850 | JOB | |
| 11 | PWMU-1-8000 | REMOVE AND INSTALL SCREWS IN COVER * AVG. OF TWO SCREWS | .03560 | JOB | |
| 12 | PWMU-1-8010 | REMOVE AND INSTALL COVER PLATE | .02620 | JOB | |
| 13 | PWMU-1-9000 | REMOVE AND INSTALL SCREWS TO REHEAT AND VENTILATING THERMOSTAT * AVG OF TWO SCREWS | .03560 | JOB | |
| 14 | PWMU-1-8010 | REMOVE AND INSTALL THERMOSTAT COVER | .02620 | JOB | |
| 15 | PWMU-1-8000 | REMOVE AND INSTALL SCREW IN FILTER LINE | .01780 | JOB | |
| 16 | PWMU-1-8013 | REMOVE AND INSTALL AIR GAUGE IN LINE | .04620 | JOB | |
| 17 | 5600 | BLEED AIR LINE DOWN | .01300 | JOB | |
| 18 | PWMU-1-9006 | ADJUST GAGE | .00670 | JOB | |
| 19 | 3935 | WAIT FOR UNIT TO COOL | .20000 | JOB | |
| 20 | PWPM-55-707 | PLACE THERMOSTAT ON TOP OF UNIT AND READ | .11656 | JOB | |
| 21 | PWMU-1-8006 | ADJUST UNIT BY TURNING SCREW | .00670 | JOB | |
| 22 | 3935 | WAIT FOR UNIT TO COOL | .20000 | JOB | |
| 23 | PWPM-55-707 | PLACE THERMOSTAT ON TOP OF UNIT AND READ | .11656 | JOB | |
| 24 | PWMU-1-8556 | WALK AROUND WORK AREA AND EQUIPMENT PERFORMING DUTIES | .00850 | JOB | |

VT-294 = 1.00302 HRS PER JOB

VT-295 HOT AIR FURNACE, GUN TYPE, (UP TO 770,000 B.T.U.)
 --OFF-SEASON MAINTENANCE

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|-----------|---|--------|---------|-----|
| 1 | PMV-9-I | CLEAN FUEL OIL, RENEW ELEMENT AND GASKET | .07584 | FURNACE | |
| 2 | PMV-9-II | CLEAN, INSPECT, ADJUST ELECTRODE/NOZZLE ASSEMBLY | .17234 | FURNACE | |
| 3 | PMV-9-III | SERVICE FUEL UNIT - - INCLUDES FUEL OIL PUMP, FORCED DRAFT BLOWER AND MOTOR | .16876 | FURNACE | |
| 4 | PMV-9-IV | SERVICE FURNACE PIRESOX AND FLUE | .41183 | FURNACE | |
| 5 | PMV-9-V | SERVICE FURNACE STACK SWITCH | .00928 | FURNACE | |
| 6 | PMV-9-VI | SERVICE AIR CIRCULATION FAN AND MOTOR - - UP TO 1 HP | .20958 | FURNACE | |
| 7 | PMV-9-VII | CONDUCT FURNACE OPERATIONAL CHECK | .11021 | FURNACE | |

VT-295 = 1.23804 HRS PER FURNACE

VT-296 ANALYZE SAMPLES OF BOILER WATER FROM FIRE TUBE BOILERS THAT ARE TREATED WITH CHEMICALS.
 * AN AVG. OF 9-BOILER SAMPLES ARE ANALYZED DAILY.

| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
|----|------------|---|--------|--------|-----|
| 1 | PMV-4-I | LAY OUT AND RETURN TO STORAGE REQUIRED EQUIPMENT | .00422 | BOILER | |
| 2 | PMV-4-II | SET UP PRELIMINARY EQUIPMENT FOR TEST | .00146 | BOILER | |
| 3 | PMV-4-III | SET UP AND SECURE SOLU-BRIDGE GAUGE | .00881 | BOILER | |
| 4 | PMV-4-IV | PREPARE DILUTED STANNOUS CHLORIDE SOLUTION | .00673 | BOILER | |
| 5 | PMV-4-V | FILL USABLE SIZE CONTAINERS WITH CONTENTS FROM LARGE CONTAINER | .02141 | BOILER | |
| 6 | PMV-4-VI | PERFORM TEST TO DETERMINE SOLID CONTENT OF SAMPLE | .03409 | BOILER | |
| 7 | PMV-4-VII | PERFORM TEST TO DETERMINE PHOSPHATE CONTENT OF SAMPLE | .08863 | BOILER | |
| 8 | PMV-4-VIII | PERFORM TEST TO DETERMINE TANNIN CONTENT OF SAMPLE | .04250 | BOILER | |
| 9 | PMV-4-IX | PERFORM TEST TO DETERMINE PRESENCE OF CAUSTICITY IN SAMPLE | .05569 | BOILER | |
| 10 | PMV-4-X | WASH FRAGILE EQUIPMENT USED IN ANALYZING BOILER WATER SAMPLES AND CLEAN UP WORK AREA, COUNTER, AND SINK | .00944 | BOILER | |
| 11 | PMV-4-XI | PREPARE BOILER WATER SAMPLES TO MAIL TO LABORATORY 1-TIME PER MONTH | .00037 | BOILER | |

VT-296 = .27255 HRS PER BOILER

| VT-297 | | CLEAN FUEL OIL FILTER; RENEW ELEMENT AND GASKET | | |
|----------|------------|--|--------|--------|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS |
| 1 | 3842 | WALK AROUND WORK AREA | .00300 | FILTER |
| 2 | 2030 | CLOSE/CHECK CLOSED FUEL OIL SHUT-OFF VALVE AND OPEN | .00630 | FILTER |
| 3 | 2301 | OBTAIN AND ASIDE WIPING CLOTH | .00320 | FILTER |
| 4 | PMU-1-8000 | UNCOUPLE AND ASSEMBLE FILTER HOUSING AND BASE | .01780 | FILTER |
| 5 | PMU-1-8005 | DISENGAGE AND FIT UP FILTER HOUSING--FILTER ELEMENT INCLUDED | .00400 | FILTER |
| 6 | 3293 | REMOVE AND DISCARD FILTER GASKET | .00039 | FILTER |
| 7 | 3293 | REMOVE AND DISCARD FILTER ELEMENT | .00039 | FILTER |
| 8 | 3159 | DUMP REMAINING OIL FROM FILTER HOUSING | .00170 | FILTER |
| 9 | 3231 | WIPE FILTER HOUSING CLEAN WITH FILTER CLOTH | .00412 | FILTER |
| 10 | 2896 | OBTAIN BOX CONTAINING NEW FILTER ELEMENT AND GASKET | .00250 | FILTER |
| 11 | 6184 | OPEN BOX AND REMOVE FILTER ELEMENT AND GASKET | .00484 | FILTER |
| 12 | 6196 | INSERT NEW FILTER ELEMENT IN HOUSING | .00049 | FILTER |
| 13 | 3738 | PLACE NEW GASKET ON FILTER HOUSING | .00097 | FILTER |
| 14 | 6180 | WIPE UP SPILLED FUEL OIL | .00199 | FILTER |
| 15 | 2581 | INSPECT FILTER FOR LEAKS | .01392 | FILTER |
| 16 | 3231 | WIPE TOOL WITH CLOTH | .00824 | FILTER |
| VT-297 = | | .07584 HRS PER FILTER | | |

| VT-298 | | CLEAN, INSPECT, ADJUST ELECTRODE/NOZZLE ASSEMBLY | | | |
|--------|-------------|---|--------|----------|-----|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
| 1 | 3842 | WALK AROUND WORK AREA | .00300 | ASSEMBLY | |
| 2 | 2901 | OBTAIN AND ASIDE WIPING CLOTH | .00520 | ASSEMBLY | |
| 3 | PMMU-1-8000 | REMOVE AND INSTALL SCREW | .03560 | ASSEMBLY | |
| 4 | PMMU-1-8005 | REMOVE AND INSTALL ACCESS PANEL OR SWING HINGED TRANSFORMER ASIDE AND BACK IN PLACE | .00400 | ASSEMBLY | |
| 5 | PMMU-1-8000 | BREAK AND MAKE UP NOZZLE LINE CONNECTION (NERRULE OR FLARE NUT) | .01730 | ASSEMBLY | |
| 6 | PMMU-1-8005 | REMOVE AND INSTALL HOLD-DOWN DEVICE FOR NOZZLE LINE (LOCK NUT, SET SCREW, LOCK LEVER, ETC.) | .01340 | ASSEMBLY | |
| 7 | 6190 | DETACH AND ATTACH ELECTRODE LEAD (SPRING CLIP) | .00112 | ASSEMBLY | |
| 8 | PMMU-1-8005 | MANEUVER ELECTRODE/NOZZLE ASSEMBLY OUT OF AND INTO AIR TUBE | .01600 | ASSEMBLY | |
| 9 | PMMU-1-8000 | REMOVE AND INSTALL BURNER NOZZLE (WITH STRAINER) | .01730 | ASSEMBLY | |
| 10 | 6190 | EXTRACT AND INSERT BURNER NOZZLE STRAINER | .00224 | ASSEMBLY | |
| 11 | 2580 | INSPECT NOZZLE AND NOZZLE STRAINER | .00565 | ASSEMBLY | |
| 12 | 1134 | CLEAN NOZZLE WITH WIRE BRUSH | .00239 | ASSEMBLY | |
| 13 | 3197 | WASH NOZZLE STRAINER WITH FUEL OIL | .03414 | ASSEMBLY | |
| 14 | 0629 | CLEAN ELECTRODE WITH EMPTY CLOTH | .02552 | ASSEMBLY | |
| 15 | 2580 | INSPECT ELECTRODES FOR PROPER GAP AND CLEARANCE | .00566 | ASSEMBLY | |
| 16 | 0913 | ADJUST ELECTRODES ELECTRODE, AVG. 1-TIME OUT OF 2 | .00290 | ASSEMBLY | |
| 17 | 3231 | WIPE TOOLS WITH CLOTH | .00324 | ASSEMBLY | |
| 18 | 6180 | WIPE UP SPILLED FUEL OIL | .00199 | ASSEMBLY | |
| VT-298 | | .17254 HRS PER ASSEMBLY | | | |

| VT-299 | | SERVICE FUEL UNIT--INCLUDES FUEL OIL PUMP, FORCED DRAFT BLOWER AND MOTOR | | | |
|--------|-------------|--|--------|-------|-----|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 |
| 1 | 3842 | WALK AROUND WORK AREA | .00060 | UNIT | |
| 2 | 2901 | OBTAIN AND ASIDE WIPING CLOTH | .01040 | UNIT | |
| 3 | PMMU-1-8000 | REMOVE AND INSTALL CAP SCREW (PUMP HEAD) | .14240 | UNIT | |
| 4 | PMMU-1-8005 | DISASSEMBLE AND FIT UP PUMP HEAD | .00400 | UNIT | |
| 5 | 3293 | REMOVE PUMP HEAD GASKET | .00039 | UNIT | |
| 6 | 3293 | REMOVE STRAINER FROM PUMP HEAD | .00039 | UNIT | |
| 7 | 2896 | OBTAIN CARTON CONTAINING NEW STRAINER AND GASKET | .00050 | UNIT | |
| 8 | 6184 | REMOVE STRAINER AND GASKET FROM CARTON | .00097 | UNIT | |
| 9 | 3197 | CLEAN EXISTING STRAINER AND GASKET | .00331 | UNIT | |
| 10 | 6196 | INSTALL STRAINER IN PUMP HOUSING | .00049 | UNIT | |
| 11 | 3738 | PLACE GASKET ON PUMP HOUSING | .00097 | UNIT | |
| 12 | 3152 | LUBRICATE PUMP/FORCED DRAFT BLOWER MOTOR | .00236 | UNIT | |
| 13 | 6180 | WIPE UP SPILLED OIL | .00199 | UNIT | |
| VT-299 | | .16876 HRS PER UNIT | | | |

| VT-300 | | SERVICE FURNACE FIREBOX AND FLUE | | | |
|----------|------------|--|--------|-------|-----|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
| 1 | 3842 | WALK AROUND WORK AREA | .03000 | JOB | |
| 2 | 3862 | OBTAIN AND ASIDE SMALL HAND TOOL | .00684 | JOB | |
| 3 | 2901 | OBTAIN AND ASIDE WIPING CLOTH | .00320 | JOB | |
| 4 | PMU-1-8000 | REMOVE AND INSTALL SCREW (ACCESS PANEL) | .01560 | JOB | |
| 5 | PMU-1-8012 | LIFT OFF ACCESS PANEL AND PLACE PANEL IN POSITION | .01780 | JOB | |
| 6 | PMU-1-8000 | REMOVE AND INSTALL NUT (FIREBOX PORT COVER) | .03560 | JOB | |
| 7 | PMU-1-8011 | REMOVE AND INSTALL FLUE CLEAN-OUT COVER, 8 INCH DIA., FRICTION FIT | .07320 | JOB | |
| 8 | 5862 | ATTACH AND REMOVE VACUUM CLEANER HOSE | .00494 | JOB | |
| 9 | 0937 | CONNECT AND DISCONNECT VACUUM CLEANER ELECTRICAL CORD | .01186 | JOB | |
| 10 | 3240 | LOOSEN ATTACHED RESIDUE IN FLUE WITH SCRAPER | .00819 | JOB | |
| 11 | 2939 | SCOOP OUT AMASSED MATERIAL IN FLUE | .00498 | JOB | |
| 12 | 3912 | START AND STOP VACUUM CLEANER | .01552 | JOB | |
| 13 | 5170 | VACUUM OUT REMAINDER OF LOOSE RESIDUE IN FLUE | .01983 | JOB | |
| 14 | 3240 | LOOSEN ATTACHED RESIDUE IN FIREBOX WITH SCRAPER | .01636 | JOB | |
| 15 | 2938 | SCOOP OUT AMASSED MATERIAL IN FIREBOX | .01644 | JOB | |
| 16 | 5169 | VACUUM OUT REMAINDER OF LOOSE MATERIAL IN FIREBOX | .08592 | JOB | |
| 17 | 1134 | CLEAN PORT COVERS | .00952 | JOB | |
| 18 | 2404 | CUT ASBESTOS ROPE TO LENGTH FOR FIREBOX PORT COVER GASKET | .00018 | JOB | |
| 19 | 0127 | FIT FIREBOX PORT COVER GASKET | .00150 | JOB | |
| 20 | 3231 | WIPE HAND TOOL WITH CLOTH | .01236 | JOB | |
| VT-300 = | | .41183 HRS PER JOB | | | |

| VT-301 | | SERVICE FURNACE STACK SWITCH | | | |
|----------|------------|--|--------|--------|-----|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V30 |
| 1 | 3862 | OBTAIN AND ASIDE SMALL HAND TOOL | .00456 | SWITCH | |
| 2 | 2901 | OBTAIN AND ASIDE WIPING CLOTH | .00416 | SWITCH | |
| 3 | PMU-1-8000 | REMOVE AND INSTALL SCREW (STACK SWITCH COVER) | .01780 | SWITCH | |
| 4 | 6192 | REMOVE AND INSTALL STACK SWITCH COVER | .00118 | SWITCH | |
| 5 | 4200 | CHECK MOVEMENT OF RELAY MANUALLY | .01000 | SWITCH | |
| 6 | 2580 | INSPECT CONTACTS, WIRING, CONNECTIONS AND RELAYS FOR UNSATISFACTORY CONDITIONS | .01415 | SWITCH | |
| 7 | PMU-1-8006 | LOOSEN AND TIGHTEN STACK SWITCH MOUNTING SCREW | .01340 | SWITCH | |
| 8 | 3294 | REMOVE STACK SWITCH FROM MOUNTING | .00057 | SWITCH | |
| 9 | 1134 | CLEAN SENSING ELEMENT WITH WIRE BRUSH | .00476 | SWITCH | |
| 10 | 2581 | INSPECT SENSING ELEMENT FOR UNSATISFACTORY CONDITION | .00928 | SWITCH | |
| 11 | 3286 | INSTALL SWITCH IN MOUNTING | .00119 | SWITCH | |
| 12 | 3231 | WIPE TOOLS WITH CLOTH | .00824 | SWITCH | |
| VT-301 = | | .08928 HRS PER SWITCH | | | |

| VT-302 | | SERVICE AIR CIRCULATION FAN AND MOTOR | | | | |
|--------|-------------|--|--------|-------|-----|--|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 | |
| 1 | 3842 | WALK AROUND WORK AREA | .00600 | JOB | | |
| 2 | 3862 | OBTAIN AND ASIDE SMALL HAND TOOL | .00684 | JOB | | |
| 3 | 2901 | OBTAIN AND ASIDE WIPING CLOTH | .00312 | JOB | | |
| 4 | PWNU-1-9383 | TURN FURNACE SWITCH OFF AND ON | .04230 | JOB | | |
| 5 | 1137 | UNLATCH AND LATCH ACCESS PANEL | .00102 | JOB | | |
| 6 | PWNU-1-8012 | REMOVE AND INSTALL ACCESS PANEL (NO FASTENERS) | .01780 | JOB | | |
| 7 | 2581 | VISUALLY INSPECT INTERIOR OF CABINET, FAN, FAN MOTOR, ETC. | .00464 | JOB | | |
| 8 | 1127 | ROTATE FAN AND MOTOR BY HAND AND CHECK CONDITION OF BELT | .01770 | JOB | | |
| 9 | PWNU-1-8440 | INSPECT, CLEAN, LUBRICATE AND ADJUST FAN MOTOR | .04810 | JOB | | |
| 10 | 3192 | LUBRICATE FAN BEARINGS | .00236 | JOB | | |
| 11 | 2605 | CHECK CONDITION OF FAN BEARING | .01906 | JOB | | |
| 12 | 3226 | WIPE DOWN CABINET INTERIOR WITH CLOTH | .04064 | JOB | | |
| VT-302 | | .20958 HRS PER JOB | | | | |

| VT-303 | | CONDUCT FURNACE OPERATIONAL CHECK | | | | |
|--------|-------------|---|--------|-------|-----|--|
| NO | REFERENCE | WORK UNIT DESCRIPTION | HOURS | UNITS | V38 | |
| 1 | 3842 | WALK AROUND WORK AREA | .00450 | CHECK | | |
| 2 | 3862 | OBTAIN AND ASIDE SMALL HAND TOOL | .00456 | CHECK | | |
| 3 | 2090 | OPEN AND CLOSE FUEL OIL SHUT OFF VALVE | .00630 | CHECK | | |
| 4 | PWNU-1-9383 | TURN FURNACE SWITCH/CIRCUIT BREAKER OFF AND ON | .02820 | CHECK | | |
| 5 | PWNU-1-8006 | LOOSEN AND TIGHTEN STACK SWITCH SET SCREW | .01340 | CHECK | | |
| 6 | 3294 | REMOVE STACK SWITCH FROM MOUNTING | .00057 | CHECK | | |
| 7 | 3286 | INSTALL STACK SWITCH IN MOUNTING | .00119 | CHECK | | |
| 8 | 2601 | OBSERVE FLAME FOR PROPER BURN | .00840 | CHECK | | |
| 9 | 5604 | ADJUST FLAME | .01775 | CHECK | | |
| 10 | 3955 | INSURE STACK SWITCH CYCLES FURNACE WITHIN PROPER TIME FRAME | .02500 | CHECK | | |
| 11 | 2392 | RESET STACK SWITCH (PUSH BUTTON) | .00034 | CHECK | | |
| VT-303 | | .11021 HRS PER CHECK | | | | |

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Installation: _____ Service: _____
 Submitted by: _____ Date: _____

EPS Feedback sheet.

The following questions are designed to assist the NAVFAC Industrial Engineering Center in its continuing effort to improve the overall quality of standard data presented in the EPS handbooks.

1. List frequently recurring tasks which are not presently covered:

| CRAFT HANDBOOK | TASK DESCRIPTION |
|----------------|------------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

2. List tasks presently covered which are never used:

| CRAFT HANDBOOK | TASK DESCRIPTION |
|----------------|------------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

3. List tasks for which, in your judgment, craft time is inaccurate - indicate whether too high or too low:

| CRAFT HANDBOOK | TASK DESCRIPTION | HIGH/LOW |
|----------------|------------------|----------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

4. Identify apparent inconsistencies in present data coverage:

5. General comments (format of data presentation, etc.)

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